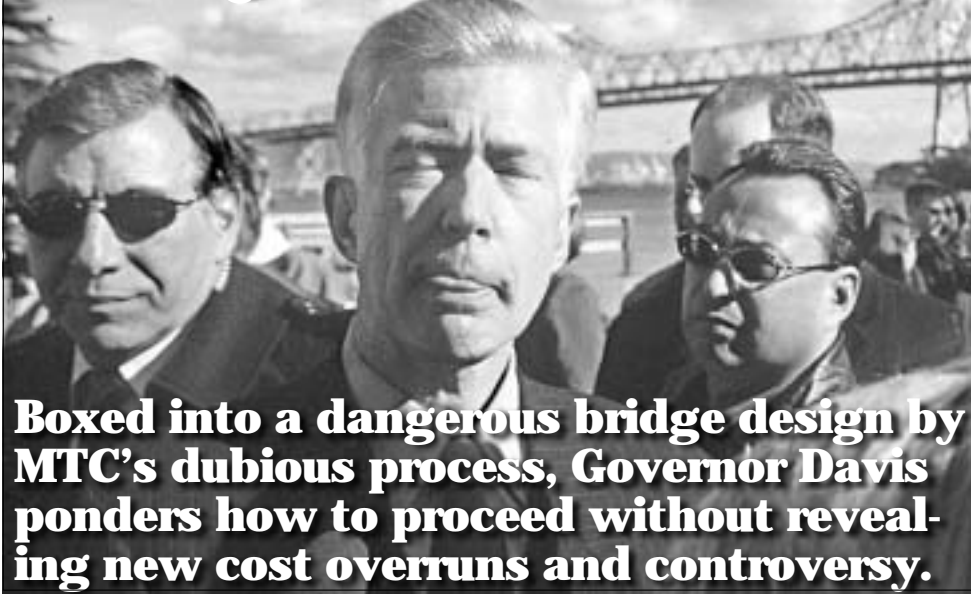


Gray's Dilemma



Boxed into a dangerous bridge design by MTC's dubious process, Governor Davis ponders how to proceed without revealing new cost overruns and controversy.

Guest Article by Robert Freehling

While our national passenger rail system pleads for \$200 million to survive, a single California bridge, the east span Bay Bridge replacement is poised to gobble \$3 billion. Most of the funding is from toll revenues originally earmarked for public transit. Rail is not in the project, in spite of several voter referenda that overwhelmingly urged rail be included. The project also precludes intercity or commuter trains on the bridge in the future. Ironically, because rail demands sturdier construction, the decision to exclude trains may have led to a less safe bridge design.

An analysis of huge cost overruns by the earthquake retrofit program on California's toll bridges was released August 1 by the State Auditor. Requested a year ago by state politicians worried about the budget-busting potential of the program, the audit found most of the extra cost is due to the planned replacement for the San Francisco-Oakland Bay Bridge east span, and is likely to grow.

The project, however still is not all under contract, and lingering questions remain about the buildability of the structure. Last September the legislature brokered a deal with Governor Davis to give Caltrans an extra two billion dollars for the program, almost doubling the price tag. The audit report said that the cost overruns were directly due to the legislature, which essentially allowed Caltrans and the Metropolitan Transportation Commission (MTC) to spend as much as want. The audit also said that Caltrans historically underestimates costs, so the price for the bridges may go even higher.

Steve Heminger, MTC Executive Director recently commented to the *San Jose Mercury News*, "The issue that remains, that neither they nor we know, is what will be the final cost." And this will depend on the ballooning price of a small portion of the bridge design added by MTC.

In 1997, when Bay Area officials and designers saw the unattractive design proposed by Caltrans, they were not happy. Here was a beautiful urban landscape, a picturesque bay crossed by a renowned collection of graceful suspension bridges. And Caltrans was about to throw a concrete freeway into the middle of it. In response to protests, Governor Wilson agreed to allow MTC a voice in the design. Caltrans chimed in that they would not build a bridge over the will of the Bay Area. MTC decided to build the east span in two parts:

1. The skyway— Caltrans' concrete freeway would be 4/5 of the span length.
2. A smaller suspension span— 1/5 the length of the bridge, on the western end, as decoration for the unsightly skyway, and to

blend in with other bridges in the bay.

To give the suspension span a function, they said it was needed to cross over a shipping channel. But Caltrans' concrete bridge had already been designed for this; chief engineer Maroney insisted that the skyway without a suspension span was Caltrans' preferred option. In any case, the east span channel is rarely used, since large ships go under the west span of the bridge.

MTC created the Engineering and Design Advisory Panel (EDAP) as a "panel of experts" to evaluate new designs for the Bay Bridge. A public competition was announced, with only ten days notice, and with some members of the jury from companies entering the competition. Bridge designer T Y Lin competed with T Y Lin International, the company he used to own. Both firms were represented on EDAP.

MTC, responding to complaints, denied conflicts of interest. MTC rules only say a conflict of interest needs to be declared, and then it is no longer a conflict of interest. On the second day of the competition, members of EDAP who were both in the jury and from firms giving submittals were asked to raise their hands; a number of them did. For MTC, that closed the issue.

Within a day of this "show of hands", Caltrans' design and a number of others were rejected. Then the panel spent a year arguing about the remaining designs. These were from firms represented on the panel. The head of EDAP was Joseph Nicholetti, a "man of many hats" who chaired another group that helped Caltrans with the same bridge retrofits, the Seismic Advisory Board.

Mr. Nicholetti was also an employee of an engineering company called URS Greiner, that was interested in getting a contract for the bridge. Now renamed URS Corp., this firm is tied to politics in the Bay Area and beyond. Faced with charges of conflict of interest, one member of EDAP withdrew, which put chair Nicholetti in an awkward position. The design he was aligned with was a more classic, and better proven, cable-stayed bridge. But if EDAP chose it, it could be accused of unfairness.

After a year of discussion, they decided on the design that had less conflict, at least for the chair. The "single towered, asymmetrical, self-anchored suspension bridge" was declared by MTC to be the choice of their body of experts, by a vote of 12 to 6. The elected MTC board asked Nicholetti the reason for this long awaited choice; he replied that it was just a personal preference he couldn't defend in any way. Half the 36 EDAP members did not bother to vote on one of the most important bridge projects in their lifetime. Some complained that a small

clique had taken over the panel, and those without plans on the table were excluded. One EDAP member said he was embarrassed to be part of this process "at this time in history."

When the choice of the unusual self anchored suspension span was made, concerns were raised about its seismic reliability. Any compromise of the integrity of any part, including the road deck, could lead to catastrophic collapse. The US Army Corps of Engineers investigated the design, and found key analysis missing, errors in calculations, hazards hidden in the foundations, and a possible fault line directly under the main tower. Seismic experts also thought the computerized earthquake model used for testing the design was inadequate.

Contractors complain that as spec'ed, the self-anchored span is nearly impossible to build. Its fragile balance of forces requires special handling, and work will have to be stopped every four hours for inspections and recalibration of machinery. A temporary "falsework" bridge will be built to support construction of the road deck, and then dismantled. Then, a huge 500 foot tall crane will be custom built to lift the main tower into place, at a cost of about \$50 million. After this project it will have no further use.

No other asymmetrical bridge of this type has ever been built. Picking this bridge type violated Caltrans's policy of "not pushing the envelope" on major bridge projects, to protect the public from being the object of untried experiments. After all, the first purpose of the \$5 billion retrofit program was to limit seismic vulnerability, not add to it.

The selected self-anchored span design is fraught with problems that can likely only be fixed by throwing a lot more money at it, or scrapping the design. So far, Caltrans, MTC, the legislature and the Governor, terrified of appearing to stand in the way of public safety, are opting for "throwing-more-money-at-it."

The seismic retrofit program puts more money at stake than Global Crossing's "accounting misstatement," but has been inadequately scrutinized. On the Bay Bridge, a panel with multiple conflicts of interest was given power to choose the design and award millions of tax dollars to their employers. Caltrans and MTC blamed the public for expensive delays; claimed that inflation was not factored in, that construction costs went up faster than anticipated; and that the bike path was not originally included. Yet the audit, and other documents, show that inflation, controversy over rail, and the potential for added amenities, delays, a bike path, and even a suspension span were all known between 1996 and 1998.

The facts should be put in context. Other Caltrans projects have ballooned in cost: recently, Caltrans announced 25% inflation of statewide road projects in just three months, even though US construction prices (labor plus materials) only went up a fraction of a percent. As can be concluded by reading the State Auditor's report, California prices escalate mostly because the Governor and Legislature are willing to let them.

The self-anchored ornamental bridge was first foreseen to add \$70 million to the project; later this was raised to \$300 million. Today it is rapidly approaching a billion dollars. Only another toll increase, this time to \$3, or new taxes, could cover the cost. The tragedy is that the toll money dumped into 'seismic retrofits' was supposed to be reserved for public transit, not cars. It was to be part of the solution, not the problem.

The politically difficult answer to out-of-control project costs will only be known after the next contract goes out to bid, which is for the self-anchored span. Bids had been scheduled for August, but currently most observers expect the process will be delayed until safely after the November election, to limit Governor Davis's political exposure to any further budget meltdown.