# Bay quake: Infrastructure deficit becomes a killer

by Chris White

Early estimates attributed about 250 of the 270 deaths in northern California's 6.9 on the Richter scale Oct. 16 earthquake disaster to the collapse of a more than one-mile section of Interstate highway 880 in Oakland. Those estimates will probably change as rescue work proceeds. The point is, however, no matter what the final toll in that tragedy turns out to be, that those who died in the collapse of Interstate 880 did not have to. The dead are unnecessary victims of the last 25 years' lack of investment in construction and maintenance of the country's basic economic infrastructure. Tuesday's tragedy in the San Francisco Bay Area proves that the negligence of the last 25 years has become a killer.

After earthquakes in 1971 revealed dangerous deficiencies in the California highway system, a program was elaborated, by 1974, to bring the system up to standard. The program, as devised in the early 1970s, was to have been a three-phase effort. In Phase I, beginning in 1974, $54.2 million was to be spent to bring 1,262 bridges in the system up to standard. Work was done on I-880, as part of the Phase I program beginning in 1977. In Phase II it was planned to spend another $64 million to provide steel and concrete sheathing for support columns in some 2,000 structures in the highway system. Phase II of the upgrade, planned by 1974, is still not scheduled to begin until March of 1990. Phase III, in which it was planned to deal with double-column bridge structures, such as the collapsed I-880, remains deferred, 15 years after the work was originally commissioned, pending the completion of engineering studies at San Diego University.

According to Jerry Oliver, Chief of Maintenance for CalTrans, the state's transportation authority, there was not enough money available to finish the job. "We knew the structure needed some changes," he told Reuters news agency. "I do not think there was any intentional effort to avoid correcting the problem. It was a question of where the finances were." Kyle Nelson, a public information department employee with CalTrans, reported that the Nimitz Freeway (I-880) "doesn't meet today's standards." Stanley Hullet of the California State Transportation Commission told the press, "It is well known that we have no money left in the pot with which to build highways, much less to fix these highways." A CalTrans memo of May 31, 1989 reported that the "degree of retrofit," earthquake-proofing of the highways, was "a balance between economic and technical considerations." The California highway system was not brought up to standard because there wasn't enough money available to do the job.

## A national problem

This is the same old song that has been heard so often during the years of the Great Economic Recovery that the country has supposedly been enjoying since 1983. "We don't have enough money," "It costs too much," "You are not considering the realities of the budgetary process." Another CalTrans employee, structures engineer Jim Roberts, put it this way: The shortage of funds during the Reagan administration was, he said, "a national problem." But the national "problem" goes back further than 1981 when the first Reagan administration took office.

California's Gov. George Deukmejian has appointed an investigative commission to examine the causes of the tragic highway collapse. Ian G. Buckle from the National Center for Earthquake Research has been appointed its head; the National Transportation Safety Board, the Federal Highway Administration, and private industry and individuals will be represented. Buckle has already been quoted defending the CalTrans approach of "fixing simple things first, difficult things last." Other officials and engineering experts point to possible design flaws in the structure (dating from 1955—when work on it began—it is one of the oldest in the Califor-

nia freeway system), insufficient employment of reinforcing steel, and the possibility that the structure was mislocated on top of a soft soil structure.

The point is that while people died in the collapse of I-880, that freeway was not the only part of the Bay Area's highway transportation grid to collapse or sustain damage. At least 10 bridges or elevated freeways in the Bay Area were affected. The Embarcadero freeway in San Francisco itself, a construction of the same design as I-880, is likely to be closed indefinitely, though the structure did not fall. Sections of U.S. Highway 101 in San Francisco and San Benito County to the south of the city are shut because bridges and access roads collapsed, and California State highway 17 from Santa Cruz to San Jose is shut. The state coastal Highway 1 is also closed. Such structures were all supposed to have been part of the three-phase earthquake proofing program adopted in 1974, but never implemented.

## LaRouche-Riemann model foresaw threat

Nor is the problem, aggravated by the known danger of earthquakes, limited to California. In 1982 and 1983 this magazine did a series of studies of the nation's basic economic infrastructure. Economic infrastructure is comprised of the transportation grid, power generation and distribution, water management and distribution, and communications. The studies were commissioned by Lyndon H. LaRouche, Jr., as part of broader work associated with the development of his model of the physical economy, known as the LaRouche-Riemann economic model. Three features of those studies remain of interest.

Firstly, it was established, from studies of the 1960s, that there is a direct correlation between investment to expand and improve infrastructural capabilities, and increases in the productivity of the economy as a whole. Between 1960 and 1967, when, under the driving impetus of President J.F. Kennedy's Apollo moon-landing program, infrastructure investment, and overall economic productivity were increasing, the curve of increasing productivity, matched the curve of increasing investment in infrastruture exactly, but with one year's delay between the two.

The 1960s saw both the most rapid expansion in the national interstate highway system, planned and begun under President Eisenhower, and also advances in provision of energy supply which have not been matched since. In per capita terms, supply of energy has actually retreated to the levels of the early and mid-1960s, back to before the benefits of that investment surge were realized.

Secondly, studies were done of the failure to maintain investment in all aspects of infrastructure from 1970 onwards. By 1983 we estimated that the accumulated unamortized shortfall, from the standard levels of the late 1960s was in the range of $3 trillion. By now, highway engineering consultants concur that another $2 trillion has been added to that estimate in unamortized depreciation and unmet maintenance costs, for a total of $5 trillion. In the last year people at the Chicago Federal Reserve and at the Massachusetts Institute for Technology have begun to replicate in their own studies work that *EIR* did six and seven years ago.

Thirdly, that such unamortized depreciation and uncovered costs are nowhere accounted for in any of the currently employed tools used for what passes as economic analysis, in either agencies of government or the so-called private sector. Yet the economic costs of producing and supplying every other aspect of economic life are increased, proportional to the decline and collapse of infrastructure construction and maintenance.

Yet, in this respect, California, with the hazards of the earthquake danger taken into account, is really no different than anywhere else in the country. California's highway system, like those in other states, was designed in the 1950s and early 1960s as adequate for traffic volumes which were also reached by the late 1960s and early 1970s. Current volumes of traffic using the system, in California, as in other predominantly urban areas, are three to four times the volume for which the systems were designed.

The gutting of railroad freight systems, typified by the early 1970s bankruptcy and reorganization of the Penn Central system, combined with the effects of Jimmy Carter's trucking deregulation to force freight carriage onto the highways, where unit costs are far more expensive than in either rail or water-borne modes.

Furthermore, the highways were designed to have a service life of between 25 and 30 years. As with electrical generating capacity, built during the same late 1950s-early 1960s timeframe, such structures are, by now, approaching the end of their designed useful life.

This is the overall context in which the lack of funding of infrastructure in California became a killer. Contrary to what the President and his economic advisers say, the economy is not sound. The collapse of infrastructure has been leading the physical economy downward into the condition of economic bankruptcy reached in 1982. Since 1984-85, the U.S. went into financial bankruptcy, too, for in that year, the earnings of the economy in terms of cash flow generation became insufficient to cover debt service and amortization charges on approximately $7 trillion of debt. Since then, the official word has been, "It costs too much," "We can no longer afford it," when it comes to funding for such necessary investments and improvements. That hasn't stopped us from adding another $5 trillion debt, and about the same amount in outright speculation over the same four-year timeframe.

In California,Peter Yanev of EQE Engineering in San Francisco reported,"There were no surprises. . . . That we've known these things for years and had no concerted push to do anything is tragic." And Tom Tobin from the State Seismic Commission said, "I get very angry when I see the damage in San Francisco. The government and engineers just have not done what needs to be done. . . . What does it have to take?"