

of system planning really is not new at Caltrans. The 1959 freeway and expressway system was a system plan.

Through the system planning process, Caltrans, in cooperation with the regional planning agencies, will identify current and long-range problems and possible solutions based on realistically constrained resources. The process will allow Caltrans to focus actions on the most important system problems, thus providing the most effective transportation system available within the limited resources. Priorities developed through the system planning effort will feed the Caltrans program identified in the TIP.

Unfortunately, system planning cannot solve all of California's transportation problems. The fund estimate for the 5-year STIP shows that a lack of adequate funds will continue to exist despite recent increases in federal and state gasoline taxes. Caltrans intends to maintain a position of not promising or programming projects that it cannot reasonably be expected to deliver.

In the densely urbanized areas of the state, highways are not the solution to all transportation problems. With the projected increases in population, Caltrans expects greater reliance on other alternatives to highway expansion. With the regional planning agencies, the department will have a greater role in promoting ridesharing, use of high-occupancy-vehicle (HOV) lanes, and transit.

Currently, Caltrans coordinates closely with the MPOs in developing and maintaining ridesharing programs. The department also participates with the regional transportation planning agencies and local agencies in solving specific transportation pro-

blems. For example, in the San Francisco Bay area, Caltrans, with the Metropolitan Transportation Commission, Golden Gate Bridge District, Marin County Planning Department, and the city of San Rafael, studied the needs and actions necessary to provide a satisfactory level of mobility along Route 101 in Marin County. The study resulted in the identification of a project, now programmed in the STIP, to construct HOV lanes along Route 101. When completed, this project will greatly ease the rush-hour congestion experienced by Marin County residents who work in San Francisco.

Caltrans has learned through experience that close cooperation among state, regional, and local agencies is essential to avoid log jams caused by separate and often conflicting planning efforts by various agencies with limited jurisdiction over the total transportation system. For example, Caltrans worked closely with San Diego's regional and local agencies years before the inception of the 3C process. The department lent its staff and expertise and in turn gained first-hand experience with local transportation problems and needs. The result is a well-planned, efficient transportation system that serves the needs of the region.

Caltrans is working closely with the other MPOs and rural transportation planning agencies throughout the state with the system planning effort as well as day-to-day regional planning activities through 11 district offices. The goal is to continue to use the planning process to help ensure that funds available for transportation are used in the most cost-effective manner. To Caltrans, planning is an essential tool for effective programming.

The Evolution of Transportation Planning in Pennsylvania

THOMAS D. LARSON

Everybody is feeling some inclination toward history here today, so I thought I'd go back and dig into history in a more authentic fashion. I brought my history book! This is the third volume in a four-volume history of George Washington. It's remarkable how little most of us know about the man who really set our democratic processes in place. In this particular reference, he was in his first year as President. He was traveling in New England, having a lot of trouble, I might add, because he was a Virginian. At any rate, one of his problems was that John Hancock, the Governor of Massachusetts, was a staunch advocate of states' rights. The question was, then, how could the President visit the state without appearing to capitulate to states' rights? As it happened, the President managed the circumstances by requesting Mr. Hancock to come visit him at his inn. Hancock said he wouldn't do this but eventually agreed. He actually came to the President all wrapped up in blankets, claiming grave illness to prove that he was capitulating with great personal loss.

Getting down to transportation, there is another reference here. The President, after he got to New Hampshire, said he'd had enough of New England and started for home. He was traveling by a sort of random route and had a lot of trouble. The roads were intolerable and the accommodations indifferent. A direct quote from our first President is as follows: "The roads in every part of this State are amazingly crooked to suit the convenience of every man's fields and the directions you receive from the people are equally blind and ignorant." After the trip he came home and prescribed FHWA, the A-95 process, and MPOs. It's part of the legend that it took 200 years to really have the President's wishes carried out. At least the first part of that story is true!

Getting down to my comments on transportation planning, I will be very brief. Much of what I could say has been covered, but clearly there is a difference between rural and urban settings. The rural setting was the problem that George Washington had-- a lot of crooked roads. Early on, we could not get

from point A to point B, so we used rather simplistic but effective ways of making judgments. And if you look at some of the old textbooks on highway engineering, you will find a very simplistic cost-benefit analysis used to pick one route over the other. As a professor, I used to teach those things. I didn't believe them then, and I don't really believe them now, but that was the doctrine we worked with. When we started using those concepts in urban settings, a lot of bad things happened, mostly because we applied an overly simplistic type of analysis in settings that were very complex.

I'd like to use 1969 as the division between the past and the present; this was when the National Environmental Policy Act (NEPA) was passed. That marked the difference between a time when planners were very effective advocates of road building and a time when lawyers took over as effective adversaries of road building. So that's the point in time when a lot of things changed.

There are specific examples of why this was important in Pennsylvania. We had a large Interstate system under way, but, for example, construction of I-95 in Philadelphia through what is known as Penns Landing, or the Society Hill area, was brought to a halt. Clearly, the environmental experts on Society Hill were much more effective than the Department of Transportation in Harrisburg. A \$300 million facility was stopped dead in its tracks because the environmental issues had not been dealt with adequately as prescribed by NEPA. The Vine Street Expressway, another major Philadelphia connector, was also stopped because one of the most historic Chinese Catholic churches in the country was threatened. I-78 in the Allentown-Bethlehem-Easton area, a major link serving New York City, was stopped because environmental questions were raised as to an appropriate alignment (whether to go north, south, or through a particular urban complex).

In western Pennsylvania, the Pittsburgh area, there were controversies that swirled around the so-called East Street Valley and North Shore complex of freeways that were to connect a major city to a complex of Interstate highways. In this example, the politics of relocating some 2,400 people out of the East Street Valley were simply overlooked by the highway planners.

These changing public moods had a large impact on the Department of Transportation in Pennsylvania, both internally and externally. The external impacts almost led to the downfall of the agency. We met the urban expressway needs, at least on paper, through the Interstate program and through other special programs. In the rural areas, expectations for freeway systems also were raised and we entered into a bonding program that is now a national legend, and perhaps a national disgrace--we borrowed \$2.5 billion to provide in rural areas what the Interstate program was providing in the urban setting. So when I hear people in this audience speak glibly of borrowing their way out of present difficulties, I urge them to visit us in Pennsylvania before going too far down that road. We can tell you what it's like to have a \$200 million/year debt service requiring 4 cents of our gasoline tax, and it won't go away until the year 2000.

The biggest problem, however, was not the debt service but the incredible expectations raised statewide for a system that, after the Arab oil embargo and the energy crisis, simply could not be built, and the internal controversy that came along was almost as bad. Within the government we had legislators demanding that we move forward, we had governors caught in a whipsaw position, and we had the department caught squarely in the middle of all this rhetoric and increasingly aware they could not

meet public expectations. Out of all that came a lot of bad things, among them the furloughing of some 7,000 employees and, for those that were left, a feeling that there was no mission for them. The department was divided into small, isolated program areas; there was the Traffic Operations Program for Increasing Capacity and Safety (TOPICS), a program for rail-highway crossings, and a program for certain kinds of safety improvements--a true balkanization with no real spirit or mission to go forward.

We felt that planning was crucial to getting things back together again. One of the things I had read and adopted as a professor at Penn State was a view of planning advanced by Kenneth Boulding. Although Kenneth Boulding has written some things since this piece on planning that would place him to the right of Attila the Hun, this particular piece was a good one and I commend it to you. Let me cite just a few of Boulding's principles (the full article was printed in a 1978 issue of the MIT Technology Review):

1. The world moves forward into the future as a result of decisions, not as a result of plans.
2. The success of planning might be measured by the extent to which it diminishes regret. (That's my favorite principle.) Planning, to be effective, should diminish regret at some time in the future.
3. The quality of decisions depends very much on the degree of uncertainty.
4. An important source of bad decisions is illusions of certainty; computerized models, those things we just loved for a while, are almost certain to produce great illusions of certainty.
5. The most valuable planner product might be the widening of agenda and the examination of values.
6. Finally, which we all ought to take to heart, the only thing that prevents planning from being disastrous in government is that it's usually not believed.

Building on this philosophy, we adopted a very pragmatic approach to planning in Pennsylvania, perhaps more pragmatic than it should have been; we were led to it in desperation.

We had a \$300 million investment in I-95 that wasn't being used. We agreed to build \$4.5 million worth of noise barriers immediately and to stop any further work on entrances into the downtown complex until we had studied the issues and local agreement had been obtained. I am pleased to note that today we have all of the remaining segments of I-95 south of Philadelphia under contract. We had previously argued for 10 years about the sludge beds that were in the path of the highway. Finally, we simply agreed to cross this obstacle, in fact, to build a bridge over them. I-95 will be open in just a few months.

In Pittsburgh we downscaled a project--I-279. We built HOV lanes and did several other things to make this project acceptable. I have to say candidly, however, that had I been Secretary of Transportation at the outset, it would never have gone forward. I think the relocation of 2,400 people out of the East Street Valley was too high a cost to pay for that particular facility. But given the fact that all those people were gone when I arrived, there was little left to do except move forward.

What we have tried to do is use the NEPA process to regain our advocacy position rather than to simply view it as an adversarial and hopeless process. That viewpoint, or perspective, has worked to our advantage.

I agree that there has to be a long, short, and immediate view of things. More importantly, you have

to work all of these simultaneously. For example, we have a multiyear program that is required by law. It spans a 12-year period. Our previous 6-year program got so big that the political forces chose to double the time for it, because all their projects wouldn't fit within a 6-year time frame. In point of fact, however, we have divided our 12-year program into three time horizons--4, 8, and 12 years; 12 years is our view of the long term, and we are willing to look at almost any idea at that level. The term of federal funding is 4 years, though, and we want projects to be real. We want to have the kinds of facts that lead us to delivery of products.

In Pennsylvania, the programming process has become credible. We have delivered some 2,000 projects from our 12-year program, worth billions of dollars. The product of our planning has become credible only because the process has delivered results.

We have also added to our planning philosophy the concept of strategic planning. We have put a large emphasis on trying to understand what the agency is about, what it can deliver, what, in fact, is the business that we are in. I think transportation agencies need to ask themselves those kinds of questions, and each manager within the agency has to ask

such questions periodically. We think that this business concept, following from our overall administration themes of economic rebirth and community conservation, gives us a sense of reality about where we are and who we are and that is very healthy for us. We believe strongly that pavement management and some of these basic programs have to be integrated into the planning process or you'll simply miss the major investment streams with your planning impact. Follow the money and you will clearly have some impact on your agency.

In short, the planning we are now doing in Pennsylvania bears little resemblance to the classic transportation planning that raised expectations so outlandishly during the 1960s and 1970s. We still look to the future, but we create Pennsylvania's image of the future, not through computers or mathematical models but through the collective vision of the people of Pennsylvania. Computers have been relegated to the task of managing information. Planners, managers if you will, use this information for decision making where the world does indeed move into the future by decisions and not as a result of plans.

The Evolution of Transportation Planning in Texas

MARK G. GOODE

The Texas Department of Highways and Public Transportation was officially formed in 1917 after Congress set up the first federal-aid act, and our responsibility as a highway department at that time was to plan and construct, with the help and cooperation of the counties, a paved roadway system to connect all the county seats. That in itself turned out to be a pretty good chore because we have 254 county seats, but it was a very close cooperative operation between the state and the counties.

The first plan, this trunk system, during the formative years of the Department of Planning was accomplished through complicated negotiations between our district representative and local officials. We have always maintained a close communication between our district offices and the city and county officials. In the early years of the department this was primarily with the county officials because we originally had very little or no jurisdiction inside the cities. In the development of the statewide system to connect the county courthouses, or county seats, our job was to work closely with the counties and the counties' first responsibility was to furnish all the state highway right-of-ways.

In fact, the counties furnished all the state highway rights-of-ways for our department until about the mid-1950s when the Interstate system came into being; at that time we shifted to a 50-50 participation where the counties or cities furnished 50 percent of the cost of the right-of-way and the state put up 50 percent. This division has been

changed to one in which the state picks up 90 percent of the cost and the city or locality retains a responsibility for 10 percent. We believe that this is important because it gives the cities and the counties a very definite veto power to prevent the state from doing something they don't want. It does have some adverse aspects from time to time. Those of you in the planning business certainly are aware of the sections of highway built because of local interests and of the difficulty in some of the counties that are strapped for funds in encouraging them to put up their matching 10 percent for such highways.

In the early years we concentrated on the roadway design standards, proper physical spacing for arterials, and required system continuity necessary for meeting each area's anticipated growth. In the early 1940s, our department was staffed with a Director of Urban Planning to assist the local areas in developing their plans. During the 1950s and early 1960s, plans for highway development became more data oriented as urban areas began making greater use of vehicle count and driver survey results. Up until this time, the level of formal planning varied between areas but the process was constant in the effort to maintain cooperation between the department and the local officials. Until we got into more formalized planning, our planning department was primarily involved in technical data collection and the first responsibility was map development. The planning department was developed originally to map