

## Luncheon Address

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"When will you ever finish construction on these roads?" I'm frequently asked.

"Never!" I reply.

"But you can't be serious," I'm told. "There has to come a time when you guys will finish up, pull out those orange construction signs, and let us drive around on a completed highway network. When can we look forward to that?"

"Never!" I reply again. "The job will never be finished."

"But why? Just tell me why," pleads the questioner, with a mixture of disbelief, scorn, and frustration.

"It's pretty simple when you think about it," I explain.

"First of all, highways are unlike many of the things we build. How many things can you think of that we construct with concrete and steel—like buildings, pipelines, dams, and power lines—that receive the kind of punishment that a road is subjected to? Over the course of its life, a highway is subjected to literally millions of hits, and each hit strikes with the force of thousands of pounds. That in itself is enough to wear anything out. Add to it the use of corrosive salts for snow and ice control, and the cyclical effects of freezing and thawing. Then you will understand why roads and bridges wear out."

"And think about it," I continue, "We have millions of miles of roads and hundreds of thousands of bridges in this country. Our pavements last only about 15 years on the average. So in any particular year, seven miles out of 100 will be repaved. Our structures do better, with bridge decks lasting 30 to 40 years and the superstructures and substructures an average of 60 to 80 years. So in any year, figure about four or five out of every 100 bridges will be under reconstruction. When you add projects for widening, drainage improvements, and safety, you can understand that, over the long run, we can expect major reconstruction activities on about one mile in every 10 to 15 in any particular year."

"Next time you take a long trip," I mention, "count the *number* of construction zones, and the *miles* of construction zones for each 100 miles you travel. You'll probably be surprised."

"But it never used to be that bad," my questioner insists. "What happened?"

"You're right," I reply. "Here's why. A large percentage of the principal arterial roadways we travel on—especially Interstates and other freeways—were built after

the mid-1950s. So during the past 30 years, we've had a relatively new network of major roads. But 30 years of pounding, caused by heavier loads and a greater number of loads than we expected, and 30 years of deterioration caused by materials not well protected from the effects of chlorides, have run the clock out. Let's face it, we have an aging system. And from now on it will *always* be an aging system, so figure that the orange construction signs are here to stay."

"Then what you're telling me is that extensive reconstruction of our road network, and the headaches that come with it, is not a one shot deal—it's a permanent fact of life?"

"Now you've got it," I reply. "The projects and routes will vary from year to year, but don't figure on taking too many long trips without encountering an array of arrowboards, cones, portable barriers, *and*, worst of all, delays and inconvenience."

"So then," comes the retort, "what are you doing to cope with this permanent fact of life? What are you doing as my highway transportation agent to keep things moving?"

"Funny you should ask," I say. "Come with me to Chicago."

And so here we are at a conference whose purpose it is to confront the worst headache of modern highway construction—namely, rebuilding our roads while they continue to carry heavy traffic.

With the benefit of 20/20 hindsight, I believe that most of us who participated in the heyday of new highway construction, which began in earnest with the 1956 Interstate Highway Act, would admit that it was not just the public who was caught relatively unprepared. Transportation professionals were caught off guard as well.

Certainly, those in the field knew that someday these roads would have to be rebuilt, although that day seems to have arrived earlier than expected in most cases. They knew too that the highway industry had the engineering and construction know-how to get the job done. And with improved technology and materials, they would surely do the job even better the second time.

But I must ask in all candor whether we were ready, philosophically and conceptually, to tackle this new type of work. What do I mean by that? What do philosophy and concept have to do with rebuilding a road under traffic? Well, let's reflect for a moment on how things were the first time through. First of all, most new roads were built on new locations, and managing traffic was simply *not* a horrendous problem. For those projects that *were* built under traffic, consider that (a) volumes were substantially lighter 25 to 30 years ago; (b) the prior condition typically found traffic on narrow, signalized arterials, so things could only get better; (c) public transportation was a more viable alternative; and (d) people used to put up with more grief and did so with less complaining and protest than today.

So now, in 1986, traffic volumes have grown, drivers are used to the convenience of freeways, a demanding and impatient public has grown to rely on the highway system, and public transportation capacities are generally lower than they were a generation ago.

So where does *philosophy* enter the scene? Philosophy enters when we consider our fundamental choice. This is the choice of whether providing an acceptable quality of highway service during the perennial process of highway reconstruction remains a desirable but adjunct factor to consider among the myriad factors we must take into account in our work—factors such as funding, engineering, environment, construction management and, of course, maintenance of traffic, *or*—and this is the choice—whether the provision of adequate traffic service becomes a *compelling, overriding objective*—an objective of *paramount concern*.

At a conference such as this, dominated by transportation planners and traffic

engineers, it is tempting to conclude that this choice has been made, and that we have made the transition to a new era in which traffic service goals are indeed dominant when planning, designing, and carrying out major reconstruction projects. Were this true, this conference might be superfluous. It is not.

The fact is that the industry, as a whole, has not yet made the transition. We who are here today are still pioneers. The traditional engineering and construction disciplines still consider the function of traffic service under construction as a necessary evil, an incidental nuisance, a nonproductive diversion of energy and resources. And so the success stories of well-planned, comprehensive corridor traffic management for major highway reconstruction still stand out as exceptions and are not yet the norm.

The pressures and incentives to overcome in achieving these successes are considerable. The pressure of cost is one example. Even though budgets are limited, funds are needed to construct temporary roadways, improve adjacent routes, provide special transit services, and offer bonuses for early completion. The pressure of construction convenience is another consideration. The best way to provide traffic service during construction may not coincide with the best way to build the project. Then there's the pressure of quality: How much quality do we sacrifice when using nighttime construction and materials that can be placed faster but are not as strong or durable?

Are we simply giving in to a different kind of pressure—political pressure—when we bear the higher costs, when we sacrifice construction efficiency, and when we possibly compromise construction quality to accommodate traffic? This is where the philosophical question comes to bear. Where *does* our primary obligation lie? Is it a higher public good to shut down the freeway or close off the bridge while we rebuild them, because by doing so we can save money, reduce construction time, and improve the quality of the final product? Or do we serve a higher public purpose by compromising these factors to keep the road or bridge open, or go to extraordinary lengths to provide alternatives?

If considered from the point of view of consumers of public services, the priorities are clear. What would be the response of consumers of electric power, telephone service, or sewer and water, if severe curtailments occurred five to ten percent of the time while the system was under reconstruction? No one would stand for it. Similarly, the priorities of transportation officials must be to keep open the arteries of personal mobility and commerce. That is where the obligation lies. And so the provision of high-quality traffic management as part of our major highway projects must be central to our thinking—from policy to practice.

Project sponsors must integrate the function into project development work, bringing together planners, traffic engineers, designers, construction managers, public affairs specialists, and all affected agencies and institutions. They must overcome inertia and myopic thinking, and re-orient and retrain. They must find innovative ways to achieve objectives without incurring unacceptable costs, inefficiencies, or losses in quality. They must be concerned first and foremost about people—the customers. They have grown to depend on the product—highways—for their basic well being. We cannot let them down, or trade their interests off in the name of engineering efficiency.

If the public is to support reconstruction programs as voters, they must be treated as *customers* whose loyalty and confidence must be won. We must not only care, we must *show* that we care in what we do, little things and big things, to minimize inconvenience and frustration. And when a certain measure of inconvenience and frustration is unavoidable, project sponsors must communicate with customers about

the whats, whys, whens, and hows. They must believe we know what we're doing, and that customer service, and not bureaucratic expedience, is our foremost value.

Customers must see that corridor traffic management for major highway reconstruction is a priority of our agencies and our profession, from top to bottom. They must hear from us, have access to us, and perceive the visible results of our efforts. As an ex-New York City strap-hanger, I can assure you from personal experience that the transportation consumer's willingness to put up with inconvenience is directly correlated with the information he or she is given about the nature of the problem. No one likes to be kept in the dark.

And finally, customers must be made aware that this is not a problem that will go away soon. This is not a fad. This is not a passing phenomenon. Rebuilding our highways is an undertaking that will never be complete. Provision of a reasonable quality of service during reconstruction is therefore a necessity. It will not be enough for administrators and traffic planners to work alone. There is a philosophy of public service inherent in this issue that must become a pervasive value of our transportation agencies. It is a philosophy that must be infused into the everyday design and construction decisions made by engineers, technicians, and contractors. And it is a philosophy that will not have fully succeeded in taking root in our profession until it is apparent that meetings such as this are, indeed, superfluous. Only then will we have succeeded.