Keynote Address: Decision Makers Need Help

DAVID F. SCHULZ
County Executive, Milwaukee, Wisconsin

In the next 3 days, conference participants are being asked to give us decision makers some help—some help in providing transportation facilities and services that both respond to existing travel demand and serve people currently not served, some help in guiding the development of our urban areas to make them transportation-efficient and environmentally sound, and some help in operating and managing the existing transportation system to best effect. But first I want to share my vision of five realities of the urban transportation environment in the 1990s.

The first reality is that resources are scarce and getting scarcer. The past 10 years have been characterized by a decreasing willingness and ability on the part of the federal government to deal with domestic issues, including the provision of transportation. The overriding federal policy during this time has been to pass the buck to states, cities, and urban counties, not only for transportation but also for human services, health care, law enforcement, education, and the environment. Transportation in urban areas has been thrown into competition with other high-priority needs, with the inevitable result that the level of maintenance and development of the urban transportation system—highway and public transit—has declined. And given taxpayer revolt across the country, it is unlikely that the resource crunch will be alleviated any time soon.

The second reality is that the vast bulk of the transportation system that we will be operating in the year 2000 is already here. My subjective impression—which it would be interesting to confirm objectively—is that the total resources currently being devoted to the highway and public transit systems at the federal, state, regional,

county, and municipal level are together insufficient even to maintain the existing systems in reasonable condition for the foreseeable future. The only way any current facilities or services are being expanded or new facilities or services developed is by in effect "stealing" money from the operation and maintenance of the existing systems. It should be clear where such a policy must inevitably lead in the long run.

The third reality is that people will continue to behave pretty much the way they do today. Although I intend to spend more of our time together here talking about this phenomenon, suffice it for the moment to say that I believe that those of us concerned with transportation in urban America can no longer wait for people to start to behave as we would like them to: living in compact, high-density residential development patterns; traveling short distances to work along well-defined corridors to destinations in orderly, compact business districts; using public transit in large numbers because they want to and not because they have to; planning their nonwork travel in orderly and efficient ways; and being very socially conscious in their selection and very limited personal use of an automobile. We have to recognize the reality that people are very unlikely to accept, and are in fact likely to strongly resist, significant changes of this sort, especially if they perceive that such changes are limiting their personal freedom of choice.

The fourth reality is that, despite the first three realities of very limited resources, a system largely already in place and by many accounts deteriorating, and the frustrating refusal of people to behave as our admittedly skewed transportation perspective requires, those same people do expect—nay, demand—that the transportation system in the 1990s deal with a number of vexing problems: the environmental damage it causes; the excessive energy it consumes; the time it wastes in traffic congestion; the deaths and injuries that some unsafe components of it cause, with their attendant human and financial cost; the urban sprawl it facilitates; and the poor job it does for too many of our people trying to participate fully in our economy and society. They also demand that the transportation system address all these problems while fulfilling its basic objective of supporting the underlying economic and social development of our cities, and do so without requiring that too much money be spent or that anyone's lives be disrupted for such foolishness as the taking of right-of-way for a new or expanded highway or transit line.

It should be clear that it is not likely that these problems are going to be successfully addressed totally, or even mostly, by maintaining

the existing system of facilities and services, managing them better, and incrementally improving or expanding them. Therefore, the fifth and final reality is that, beyond maintenance, operational improvement, and incremental additions to current facilities and services, serious consideration is going to have to be given to what I would describe as significant changes in the urban transportation system: major new facilities and services, new or substantially modified technologies, and substantial changes in the way we use transportation and land. However, all of these changes, or others that are conceivable, share a common characteristic: they each face significant hurdles to successful implementation, most notably a great reluctance on behalf of the public, whose lot they would presumably improve, to accept them, let alone support and advocate them. And without public acceptance, support, and advocacy, these changes simply cannot be accomplished, however much they are needed.

However, as we consider how to make decisions regarding the provision of transportation and how we can do a better job of it, we can find a clue in this last reality. It is time for us to stop planning transportation for people and start planning transportation with people, start treating them like intelligent consumers of the services and facilities we provide, rather than mindless drones who won't do what we think is in their best interest.

Let me make a modest suggestion. A successful firm in the private sector, stuck with a product having the difficulties of our current urban transportation system, would resort to a process called marketing. Now, many people think that marketing is just advertising for some product or service. But advertising is only a relatively small part of marketing.

The three components of successful marketing are, first, market research; second, product design; and third, advertising and promotion. So let us spend the remainder of our time together using the marketing model to reflect about what the urban transportation agenda for the rest of this century should look like.

Let us start with market research. Typically, market research consists of systematically studying the marketplace in search of an opportunity to successfully produce and sell a product or service. From the perspective of the urban transportation system, clearly the product is the movement of people from one place to another. The urban travel demand modeling and forecasting process has been our primary version of market research.

However, most urban travel demand models are calibrated with data from comprehensive origin and destination surveys conducted

in the 1950s or 1960s that have since been updated with infrequent surveys using small sample sizes. Well, the world of urban transportation has changed completely in the last quarter century. Suburbanization of both residences and jobs has exploded. Despite the best efforts of planners, in many areas development has occurred at densities far lower than can be served effectively by conventional public transit, so that the transit mode share has declined. Women have entered the work force in unprecedented numbers, and working single-parent heads-of-household have become relatively commonplace. Both these phenomena place significant new demands on the transportation system in terms of access to child care and the importance of travel time reliability. The loss in urban areas in the Northeast and Midwest of traditional manufacturing jobs overseas, together with nationwide economic changes emphasizing higher and better job skills, the growing plague of multigenerational welfare dependency, and the recent upsurge in legal and illegal non-English-speaking immigrants, have created ghettos of despair in virtually every central city in America. In these central cities, people are cut off by barriers of education, language, race, culture, economic change, and, yes, transportation from the sort of good-paying entry-level jobs that immigrants and poor people have historically used to fight their way up the ladder.

The important implication of these changes, at the market research phase, is that we must develop a renewed detailed quantitative understanding of the travel marketplace we are trying to serve. However, we must be careful not to view the market for travel as a monolith, but rather as an incredibly large series of market segments, each with its own transportation problems and opportunities. For example, the typical urban radial freeway and transit systems, adjusted for topography and geography and possibly complemented by a ring road or two, were designed to serve the work trips of the stereotypical central business district commuter. But downtown-oriented work trips have always been a minority of urban trips, and their importance has been steadily declining. In order to plan the transportation services and facilities of the next century, we need a detailed understanding of reverse commuting; suburb-to-suburb commuting; educational, recreational, and social travel; truck freight movement; and other aspects of this complex, segmented travel market.

This leads me to my first two fearless recommendations. First, we should resume regular detailed origin and destination studies in medium-sized and large cities. In addition to traditional trip data, these surveys should also include detailed data collection in the

areas of travel and land use behavior. We really need to understand travel better at the household and individual levels to capture the complexity of travel behavior, because the choices of where, when, and how to travel are made at this micro level. Therefore, we need to supplement traditional areawide trip surveys with small precisely targeted sample surveys to measure travel attitudes and behavior within each of the multiple segments of the urban travel market.

Second, using existing data and the results of these new surveys, we should develop a detailed understanding of the highly segmented travel markets of urban areas, with special emphasis on identifying unserved and underserved market segments, particularly among people who are relatively powerless. Also, recognizing that people do not always behave as transportation planners may wish, this understanding should be firmly grounded in a consumer-oriented approach. This enhanced understanding of urban travel should be used in an effort to define the limits of public policy's ability to modify behavior in matters such as land use preferences, mode choice, automobile usage, and overall travel habits while identifying areas where travel behavior modification could possibly work and likely successful mechanisms and themes for such efforts.

Once market research provides an understanding of the market to be served in all its complexity, plans are developed for design of products to serve that market. Any successful product design must begin with an intimate understanding of present and past similar products in the marketplace. The urban transportation product design effort must therefore begin with a detailed appreciation of the existing transportation system, both physically and functionally. This is especially important given my second reality, that most of what we will have in 9 years is already here.

Therefore, my third recommendation is that we develop a comprehensive appreciation of the current condition of the highway and public transit systems in each urban area and the need to repair, replace, expand, or add to them. This appreciation should be augmented by nationwide efforts to look for generalizable patterns in the urban infrastructure. For example, exactly what constitutes the "life-cycle" of a facility needs to be better understood. Attention must be focused on the trade-off among initial investment, required repair and maintenance over the life of the facility, and the length of that lifetime itself. The out-year costs of both capital and operating decisions must be accurately and convincingly estimated, which would mark a major step toward achieving an appropriate level of infrastructure investment and reinvestment. This will not only allow development

of better design standards, which I will discuss later, but will also allow the improved design and justification of managed maintenance and repair programs.

The advent of readily affordable, large-scale data management capabilities, especially in the area of storing mapped information, together with the ongoing development of computer-assisted infrastructure management capabilities, have the potential to provide accurate real-time information on the condition of the infrastructure systems in the field and allow priority targeting of scarce resources. My fourth recommendation is that we develop such capabilities in every large and medium-sized city in the country and look for common opportunities and problems in the development of such systems with an eye toward advancing the state of the art nationally in areawide comprehensive infrastructure data management.

By the way, don't you think it is about time that the dirty, everyday job of managing the infrastructure to achieve maximum performance is elevated in both importance and respectability? Oftentimes the most creative and imaginative—but least visible—people connected with the transportation system are those charged with facility operation. Agencies responsible for running a highway or transit system, or both, must give a high priority to managing that system in a manner consistent with the maximum possible productivity. The key is to remember that once operating improvements are implemented, they quickly fade away unless carefully and continuously cultivated. System management is an everyday responsibility. Therefore, my fifth recommendation is that we give the kind of respect and resources to the critically important job of managing our existing systems that the job deserves, including the recognition and support of outstanding system managers, research to advance the state of the art of highway and transit system management, and the transfer of significant advancements in systems management techniques and technology nationwide.

In light of the reality of limited resource availability, it is more important than ever that we ensure that we are getting the most for our money. There have been and continue to be problems with unrealistically high design standards for urban transportation facilities, which force a less than optimal use of resources at a time when resources are desperately short throughout the urban transportation system. Therefore, my sixth recommendation is that we accelerate the push for more realistic urban highway and transit design standards.

Those who advocate clinging to historically high design standards point with considerable justification to components of systems and

sometimes whole systems that have served significantly greater demands than those for which they were designed, often without appropriate maintenance and sometimes without any maintenance at all, simply because they were overdesigned. Others point out, with equal conviction and credibility, that unrealistically high design standards, especially in urban areas, can drain scarce resources from other components of the system, leading to a situation in which parts of the system are overbuilt, whereas others have serious capacity and condition problems. I am not suggesting a solution to this dilemma, merely reminding you that it exists.

These revised design standards should also incorporate, to a degree not heretofore seen, provisions for future major reconstruction or replacement of the facility in question. For example, design standards must take into account how the deck of an elevated freeway can be replaced multiple times as it wears out while the supporting structure continues to function well. Similarly, the impact on service areas of prolonged outages for repair or replacement and how the effects of these outages can be minimized through shrewd farsighted design must be carefully considered.

Although they could conceivably be addressed under design standards, considerations of the environment, energy, and safety are worthy of a recommendation of their own. My seventh recommendation is that we develop project planning and design protocols with an underlying sensitivity to the environment, energy, and safety. This will not be limited to the perfunctory performance of an environmental impact assessment, but rather will spring from a real appreciation of the value and scarcity of the air, water, land, flora, fauna, and energy, coupled with the importance of transportation system safety. Our aim would be to develop projects to accomplish societal goals such as mobility and economic development in ways that minimize the negative impact on the environment, undue energy consumption, and unsafe transport conditions, and take reasonable steps to mitigate unavoidable harm. This development could be aided by a series of demonstration projects, which would experiment with alternative approaches to meeting this admittedly difficult goal.

The third phase of the marketing model is advertising and promotion. Clearly, we have not enjoyed the success for which we might have wished in changing people's behavior regarding transportation and land use decisions. Assuming that we can get some good data about likely targets of opportunity as I previously discussed, my eighth recommendation is that we identify the barriers to improving public acceptance of such desirable urban travel behaviors as riding public

transit, ridesharing, creative work scheduling, efficient land development patterns, and others, as well as identify, on the basis of the experience of the last three decades of urban transportation planning and development, realistic limits on our ability to markedly change public behavior with regard to transportation and land use.

Once the barriers have been discovered, a realistically achievable advertising and promotion program aimed at encouraging appropriate travel behavior changes should be designed and implemented. However, at the risk of repeating myself, let me caution that we need to cut loose from our previous self-delusion that because something seems transparently obvious to the enlightened—us—it will automatically be slavishly accepted by "them." It is important that we not blame the customer for the problems of the urban transportation system and that we focus our efforts to change the way the customers use our services and facilities (and underlying all this how they use the land and how they develop our cities) on measures that are likely to be accepted, and accepted somewhat enthusiastically. If we as a society are unwilling and unable—and I believe we are—to directly control the use of land other than through the crude and imperfect tools of zoning and development guidelines, and if we are unwilling and unable—and I believe we are—to regulate people's travel other than through the crude and imperfect tools of parking supply and price limitations, public transit subsidies, and automobile fuel efficiency requirements, then we must focus our attention on land use and transportation behavior change measures that people want to accept.

As an aside, special attention needs to be paid to those relatively few people who may be asked to pay an inordinate share of the price of system improvement—those affected by property taking, unavoidable noise, and other direct impacts. Although mitigation measures need to be employed, there is a need to communicate the need at some point for appropriately mitigated sacrifice.

Because so much of the challenge we face is caused by current resource constraints, the advertising and promotion phase of our marketing effort needs to address public support for investment in the urban transportation system. For too long, transportation "needs lists" have been impossibly large, to the point at which elected decision makers and the general public are simply numbed. If we are to be successful in attracting public support for additional resources for the urban transportation system, it will be because we have made a convincing case of the real need for those resources. Therefore, my ninth recommendation is that we identify realistic urban transportation facility and service needs. Such a needs identification should

start with an identification simply of what will be required to operate and maintain the existing urban highway and transit systems in decent order. Incremental programs for improvement can then be added. The direct relationship between infrastructure reinvestment and domestic productivity documented by a number of researchers provides the tangible evidence of both the need and the justification for additional infrastructure investment and should be further substantiated in the development of the new needs list I am suggesting.

It is probably also past time that we confront the reality that there may never be sufficient resources available to accomplish all that "needs" to be done. Although revised design standards will help, the bottom line is that we may need to scale back our previous ideas of what transportation services and facilities we can and should provide. We can begin by seriously questioning the unspoken planning assumption that we are going to maintain and operate all existing urban transportation services and facilities indefinitely. In point of fact, in the real world, we both add to and subtract from the system all the time as demands change. So we should probably also add a "don't needs" list, too.

In concluding my discussion of this marketing model, let me talk about the transportation planning and programming process. In an era of very limited resources, with urban transportation expected to solve a variety of challenges, planning has become, and must continue to become, more important than ever—not only regional system planning, but also planning at the community, corridor, and project levels, and, perhaps most important, land use planning. Planning represents the systematic quantitative anticipation of facility needs and provides for the provision of those needs in a way that minimizes overall cost—both capital and operating—and other negative impacts while maximizing benefit. Planning must be sensitive to both financial constraints and environmental imperatives. Plans that are unrealistic are worse than no plans at all, because a plan that cannot be implemented offers unattainable hope that a real problem can be solved with an unreal solution.

Planning must effectively confront that most difficult of obstacles: uncertainty. To do so, planners must find and admit where uncertainty exists, and leave sufficient flexibility to respond to a reasonable range of likely future circumstances. Planners must not prematurely foreclose alternatives or zero in on a single solution before critical forecast parameters subject to uncertainty can be verified by experience.

Programming can be an important tool, but only if it too is realistic. For too long, programming has been "wish listing," "trial balloon-

ing," or both. Although they are valid exercises, they do not belong in transportation improvements programming. Programming must be realistically resource-constrained. This will force programmers to confront and resolve resource limitations and provide important feedback to the planning process on plan implementability.

Programming will also be tied as closely as possible to real decision makers—like me—for without our active involvement and concurrence, programming becomes a dangerous exercise in self-delusion. Therefore my 10th recommendation is that we recognize the increasing importance of the planning process; that we support the planning process with the time, energy, and resources necessary for it to work well; and that we continue to advance the state of the art of planning and programming techniques.

My 11th recommendation builds on my 10th. In many cities in the United States we are entering our fourth decade of comprehensive areawide coordinated land use and transportation planning. Although we have met with considerable success—notably in the provision of the basic framework of urban freeways, the development of other arterial streets and highways, and, in some cities, the start-up of new transit systems—we have also met with some failures—notably the apparent inability in many areas to control low-density resource-wasteful urban sprawl. Therefore, my final recommendation is that we comprehensively review our regional land use and transportation planning experience nationwide with an eye toward systematically identifying our successes and our failures, finding out, if we can, why some things worked and some things didn't, and use what we learn to recast the process to carry us into the next century. Again, however, we should do so with a keen appreciation of what is realistically achievable.

Urban America at the end of the 20th century faces a transportation challenge at least as great as that faced and overcome by the great railroad builders of the 19th century, the great urban transit system builders of the early 20th century, and the great urban freeway builders of the mid-20th century. Urban transportation infrastructure is wearing out, and requires maintenance, replacement, and—where appropriate—expansion. Continued urban development requires new transportation facilities and services. Concerns for the environment and energy must be addressed. Traffic congestion and transport safety are problematic in many areas. Many of the poor, the old, the young, and the disabled, together with working mothers and single parents, are ill served by the existing system. Tasked to solve these problems, the realities are that, first, resources are scarce; second, most of the

system of the year 2000 is here today; third, people's behavior is unlikely to change to the degree some might wish; fourth, the list of challenges we're asked to face is daunting; and fifth, some big changes are going to be necessary if we are going to meet those challenges successfully.

I suggest a new approach to thinking about our urban transportation challenge. This new approach is modeled on the private-sector marketing approach, consisting of market research, product design, and advertising and promotion. On the basis of this new approach, I recommend 11 areas for those of us interested in the development of urban transportation to pursue:

1. Obtaining more and better travel behavior data;
2. Developing a better understanding of urban travel—a highly segmented market of great complexity;
3. Preparing and maintaining an upgraded inventory of the existing system—especially a detailed appreciation of the remaining "life-cycle" of major system components;
4. Enhancing the management and use of facility condition data;
5. Improving the management of urban transportation systems coupled with upgrading the transfer of systems management knowledge and technology;
6. Revising design standards targeted to fiscal realities and keyed to periodic renovation;
7. Increasing sensitivity of the design and planning processes to environmental, energy, and safety concerns;
8. Refining our understanding of public acceptance of travel and land use behavior changes, tied to increased efforts to promote realistically achievable changes in such behavior;
9. Updating and making more realistic our identification of urban transportation facility and service needs;
10. Supporting improved transportation planning and programming that deals better with uncertainty, is more realistic, and is more closely tied to decision makers; and
11. Reviewing the national experience to date with regional land use and transportation planning to identify success and failures.

This is the new era of urban transportation development. It is unlike any era that has gone before. It is more complicated, more difficult, more time-consuming, more frustrating, more technically demanding, and simply more challenging than its predecessors. It will require more time, patience, energy, understanding, and skill—

both technical skill and people skill—than any era of urban transportation development that preceded it.

If we are to successfully confront this challenging era, we must work together: federal, state, local government, academia, and the private sector. Frontline decision makers and technical practitioners must be buttressed by sound planning and far-sighted research and development. I believe we can successfully confront this challenge and that this conference represents a key step in successfully forging such a cooperative partnership and reasonable consensus on future directions.