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STATEWIDE TRANSPORTATION PLANNING

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Statewide Transportation Planning

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FOREWORD

In June 1996, the TRB Committee on Statewide Multimodal Transportation Planning sponsored a national conference on statewide transportation planning that was held in Coeur d'Alene, Idaho. The purpose of the conference was to examine the state experience with ISTEA-mandated statewide planning, and to discuss changes to the planning requirements in the forthcoming ISTEA reauthorization. The meeting was held in conjunction with the mid-year meeting of the Standing Committee on Planning of the American Association of State Highway and Transportation Officials (AASHTO). Over 100 individuals attended the conference with 40 states represented.

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INTRODUCTION AND EXECUTIVE SUMMARY

Michael D. Meyer
Georgia Institute of Technology

INTRODUCTION

What we as transportation professionals do most often reflects the demands and influences placed upon us by events external to the profession. The clearest manifestation of this is found in the laws and regulations that guide the planning and design of transportation systems. And over the past 10 years, much has happened in this regard. We are in many ways at a turning point in the evolution of transportation. For 50 years the primary focus and attention of our professional interest and resources have been on building a highway system without comparison in the world. For financial, environmental, political, and technological reasons, we are no longer in a massive road-building era. The critical question thus becomes, what do we do next?

Legislatively, the first collective answer to this question came with the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991. This legislation provided a vision for a post-Interstate transportation system and importantly took the first steps in adjusting the process of planning and funding this system. ISTEA, however, was just an initial step in defining this future. It "opened the door" for some new and different ways of doing things. And as could be expected, some people liked what they saw, and others did not. In this context then, ISTEA must be viewed as the first of many legislative initiatives that will over several years lay out the structure for transportation programs over the next several decades.

One of the important elements of ISTEA was the federal requirement for states to have a statewide transportation planning process. Although many state departments of transportation (DOTs) had been doing so for years, all states were now required to have such a planning process. ISTEA also prescribed the desired characteristics and products of statewide planning. In 1992, TRB's Committee on Statewide Multimodal Transportation Planning sponsored a national conference in Seattle to outline and discuss what these new requirements meant to the states. However, very little time had elapsed from the passage of ISTEA for there to be many examples of how states had been conducting ISTEA-era statewide planning. Instead, the conference focussed on exchanging ideas of how to respond to these new requirements.

Four years later, in June 1996, the TRB Committee once again sponsored a national conference on statewide transportation planning that was held in Coeur d'Alene, Idaho. The purpose of this conference was to examine the state experience with ISTEA-mandated statewide planning and to discuss potential changes to the planning requirements in the forthcoming ISTEA reauthorization. The meeting was held in conjunction with the mid-year meeting of the Standing Committee on Planning of the American Association of State Highway and Transportation Officials. Over 100 people attended the conference with 40 states represented.

The conference was organized to promote as much dialogue as possible. Breakout discussion groups and plenary discussion sessions were structured to provide opportunities for input. The conference formal program consisted of six plenary sessions that provided a focus for the discussion. The first session included presentations from three DOT chief administrative officers who were asked to discuss how transportation planning was used in their organizations and to discuss potential changes in the regulations that would enhance this role. The second session focussed on reauthorization and consisted of speakers from many different perspectives offering their suggestions. The third session examined one of the key themes of the ISTEA planning vision-linking planning to programming and finance. The fourth session reflected the growing importance and interest in system management and operations, and how to incorporate such concerns into the transportation planning process. The fifth session discussed alternative analytical tools that are being used in statewide planning, and improvements to the current state-of-practice in analysis methodology. The final session presented examples of states where all of these elements were "brought together" in a coordinated and comprehensive manner. The following proceedings reflect the key themes and concepts that surfaced from this conference.

EXECUTIVE SUMMARY

This executive summary represents an overview of the key concepts and themes discussed at this conference. Given the many different perspectives found at the conference, one cannot claim that the following summary issues would

be unanimously accepted by those attending. However, this summary does represent what was perceived as a majority view; in those cases where vocal disagreements occurred, both perspectives are presented.

Points of Departure

There were several statements made by participants that were accepted as common points of departure for the discussions that occurred during the conference. These points of departure included:

ISTEA Is A Good First Step.... The planning elements of ISTEA and the requirements for public involvement were generally considered a good foundation for transportation planning activities. Conference participants generally applauded the initiative to invite more groups and stakeholders to be "at the table." In addition, the intermodal focus of the transportation policy and resulting planning process was considered to be a step in the right direction. Some elements of ISTEA (e.g., the required management systems) did not receive universal support, but generally the feeling was that ISTEA reauthorization should be an exercise in "fine tuning" the planning requirements, not starting over.

Planning As Decision Support.... Transportation planning can serve many purposes, and in fact the first round of statewide transportation plans varied significantly. Some were merely statements of policy, whereas others provided detailed lists of specific projects implemented. Conference participants agreed, however, that the primary purpose of planning is to provide information to decision makers. This necessarily requires an awareness of what information is desired and needed for such decisions, and how to present this information in an understandable way. Many participants talked about "user-friendly" planning and about orienting the planning process and products to a more understandable format.

Context Is Important.... Throughout the conference, speakers continually referred to the political context within which transportation decisions were made and the importance of this context to the outcomes of these decisions. State DOT officials commented that the generally conservative swing in the political environment meant greater difficulty in raising gas taxes and a higher level of cynicism toward government programs. This creates a challenge to transportation planners not only in developing plans and programs that reflect likely financial resources, but also in motivating the public and key stakeholders to participate in the planning process.

Partnerships Are A Key.... One of the important concepts that has characterized transportation planning and finance over the past five years has been partnerships.

Almost every state represented at the conference had an example of how the DOT had worked together with some group to develop, implement, and/or finance a transportation project. This concept of partnership, however, was extended to more than just the typical public/private partnership arrangements to include partnerships among government agencies and even a broadened partnership arrangement among divisions within an agency. Conference participants agreed that partnerships are an excellent foundation for effective transportation planning and program development, and will likely characterize state DOT activities over the next several years.

Private Sector Role Is Critical.... Within the more general concept of partnerships, conference participants felt that one of the most important positive developments of ISTEA was a greater emphasis on private sector involvement in transportation. This involvement most noticeably occurred in those activities that were considered to be intermodal and freight-oriented. It seemed clear to many that the customers of transportation agency products and services needed to be part of the planning of the transportation system. This customer base very much includes private sector companies and groups.

Public Involvement In Planning Is A Useful Part of the Process.... ISTEA required a proactive program of public involvement as part of the planning process. There were many examples of successful programs discussed at the conference, and there was a general sense that such involvement is an important part of the planning process. Not only does public involvement provide for a broader consensus on the transportation plan, but in some cases, it was portrayed as an important step in developing a constituency for new financing programs.

A Focus On System Preservation.... Many of the states commented that the most important focus of their transportation programs is preserving the condition and performance of the system. Put in broader terms of asset management, this focus implies improved means of monitoring system characteristics and of having the funding flexibility to support these types of improvements. In the context of statewide transportation planning, a focus on system preservation means a close interaction with operations and maintenance staff and not insignificant challenges in motivating public officials and private sector participants in the planning process to be excited about this type of investment.

No One Best Way.... Not surprisingly, state DOT representatives argued that federal rules and regulations concerning statewide transportation planning should be flexible enough to allow states to develop a planning process most appropriate for their needs. This approach

is consistent with the perspective on planning as primarily a decision support process. Every state has its own unique political and institutional structure for decision making. Thus, a planning process linked to such decision making will also exhibit its own unique characteristics. The federal role certainly entails articulating national goals, and establishing minimal requirements for achieving these goals, but how these are achieved at the state level should be left largely to the states.

These eight points of departure provided a set of commonly accepted concepts and assumptions for the discussion that occurred at the conference. The following sections present more detail on discussions that occurred on specific topics, usually related to the plenary sessions.

Linking Planning, Programming, Finance

There was general agreement that the planning process should be strongly linked to the development of a program. This, after all, has been a requirement at the metropolitan level for some time. There was less consensus on the linkage between planning and finance, most notably because these responsibilities are often found in different organizational units within a state DOT. The development of a finance strategy for the implementation of a plan and program is clearly related to the scope and credibility of the transportation plan. In fact, several participants mentioned that having a credible plan was critical in convincing legislative bodies and private investors to raise revenues for a program or project.

There were two key issues that received most attention on this topic - financial constraint and organizational structure.

1. Financial Constraint - ISTEA required that plans and programs be financially constrained. The interpretation of "financial constraint" seemed to vary among the participants. Some interpreted this to mean little or no possibility of including more projects in the plan than there were revenues. Others suggested that such a limited constraint could in fact be one scenario under which a plan is evaluated. The issue of financial constraint varied in controversy by whether it was applied to a plan or a program. There was general agreement that a program document should be financially realistic and only include those projects for which there are revenues. However, even here there was a general consensus that some flexibility for over-programming should be allowed to account for project development delays or other project needs that might move some projects ahead of others.

The strongest disagreement occurred with the concept of a financially constrained plan. A majority of state representatives felt that requiring a plan to include only those projects for which revenues are identified reduces the visionary characteristic of transportation planning. As noted by one state official, most of the urban rail systems in U.S. urban areas would not have been built if such a requirement had existed previously. There was a sense on the part of many participants that the financial constraint limitation should be relaxed. Others felt that having such a constraint provided credibility to the process and to the plan. In some sense, financial constraint provided a level of reality to the plan.

2. Organizational Structure - Some states had reorganized their departments to combine planning and programming, whereas others had left the two separated organizationally. The Wisconsin DOT had refocused its planning, programming, and finance efforts into an "investment management process." This was viewed as a better approach toward building investment planning and financing capability within the organization. There was no general agreement on a best way of organizationally linking planning, programming, and finance. As noted by one participant, these functions do not have to be in one unit, all you need is for those responsible to talk to one another. Each DOT will be different in how it handles the three. What seems clear though is that planning, programming and finance will become more integrally connected in future years and in many cases this could entail organizational change.

Performance-Based Planning

One of the most controversial topics at the conference was the concept of performance-based planning. The discussion of this type of planning often focussed on performance measures, outcomes versus outputs, and management systems. Performance-based planning simply implies that the planning process identifies key performance and/or condition measures that are monitored over time to determine trends in system performance and to identify the impact of improvements made to this system. There were two key components of the discussion that merit attention.

1. Outputs versus Outcomes - Outputs relate to the actual production of an organization, whereas outcome means how this production affects areas or issues of concern. For example, an output measure for a state DOT might be number of lane-miles repaved or number of bridges rehabilitated. An outcome measure might be number of accidents or level of air pollution, hopefully in

these cases, a reduction in both. There was a great deal of concern that performance measures would be defined as outputs and thus be used for comparing one state to another. It was strongly felt that such comparisons are not valid given the numerous contextual elements in each state that influence these outputs.

Many participants argued that outcome measures were the appropriate types of performance measures. This type of information is desired by decision makers and by the public who want to know how transportation investment affects the world they live in. What impact does our program of investment have on economic development? on air quality? on mobility? on safety? Are we in fact seeing achievement in these areas from our previous investment? However, many also agreed that these measures are often difficult to quantify and that the causal link between transportation investment and the activity of interest is difficult to establish.

Becoming accountable for dollars spent and maintaining credibility in the eyes of those who provide financial resources for transportation investment will likely mean a continuing trend toward performance-based planning. Other sectors such as health, education, and safety have been under increasing scrutiny to justify expenditures with regard to ultimate outcomes. Transportation will, and in some cases already is, facing similar pressures. As a profession, we need the ability to answer the question of what society gets for investment in the transportation system. Performance-based planning is a means of doing that.

2. Management Systems - The ISTEA-required management systems were viewed by many as an example of one form of performance-based planning that was implemented in an inappropriate way. They were viewed as being too prescriptive in defining what performance measures were appropriate, and too cumbersome and data intensive. Making these management systems voluntary (as the NHS legislation did) was viewed by some as the end of performance-based planning in transportation. However, as was noted by several participants, even with these management systems now being voluntary, many states are continuing with their development, albeit targeted to their needs and available resources. The general sense was that having some systematic process of providing information to decision makers was desirable. Having this system linked to state-defined performance measures was also desirable. Management systems are one way of doing this. The key, however, is providing flexibility to the users of the management systems to design them in a way that best fits the decision making context of their agency.

Linking Planning and Operations

As transportation investment shifts more to system preservation and enhancing operational efficiency and safety, planning needs to better reflect these concerns in the process and in the plan. One of the examples used throughout this discussion was the difficulty in getting intelligent transportation systems (ITS) strategies considered as part of planning and project development activities. Other examples included safety improvements, transit operational changes, demand management, and traffic engineering options. Not only was there a disconnect between the traditional planning process (which tended to focus on new capacity projects) and these types of actions, but there were often organizational barriers. Operations-oriented projects are usually the purview of traffic engineering and/or maintenance units, two groups that do not often actively participate in statewide planning activities.

Incorporating system operations concerns into other parts of an agency's activities can be done in different ways. The following strategies were discussed:

- System operations strategies should be considered as valid alternatives in planning efforts. This means that operational strategies should be viewed as a means of enhancing capacity as much as physically expanding the capacity. This also implies that operations units should be an active participant in the planning process.
- Operability of a facility or service should be incorporated into project design. This means again that those most familiar with the operations of a particular facility should be actively involved in the design of that facility.
- Operational responsibilities should be determined before the project development process proceeds too far. This will allow those ultimately responsible to participate in design.
- Operational characteristics of different alternatives should influence the choice of projects. The effectiveness of different options will be directly linked to such characteristics, therefore project prioritization should consciously reflect operations.
- In order to have such influence, we need better estimates of benefits and costs for system operations strategies. This is particularly true for estimates of benefits. As was noted by several participants, we still don't have a good sense of what benefits will accrue from ITS projects, especially as they relate to outcomes. With systemwide ITS strategies often being quite costly, this lack of information is a real barrier to convincing officials to allocate resources in such a direction.

The discussion on operations also led to several points on the importance of freight issues in transportation planning.

Incorporating Freight Concerns Into Planning

If there was one area that most participants felt had been neglected by state transportation planners for many years, it was freight. ISTEA provided greater emphasis on such concerns in the transportation planning process which was considered a major contribution. And several examples were given at the conference which illustrated how freight movement was being incorporated into planning. However, even with this progress, conference participants agreed that much had yet to be done. In particular, the following issues seemed to dominate this conversation.

Many Influencing Trends – One of the key planning challenges with freight movement is anticipating the major technological and market changes that could have a dramatic impact on a state's transportation system. For example, ever larger container ships serving world trade will severely tax the ability of U.S. ports, and more importantly access to these ports, to quickly handle this level of cargo. Information technology is allowing rapid movement of goods around the world. And trade agreements like NAFTA could have significant implications for freight movement through a state, most certainly for border states. All of his needs to be part of the planning process.

Geographic Scale – By its very nature, much of freight movement transcends state boundaries. Thus, freight moving through the midwest could be significantly affected by what happens at coastal ports. Global markets necessarily widen the planning focus to beyond a state boundary. And yet in only a few instances have states looked beyond their jurisdiction to examine the international, national, and regional nature of freight movement. It seems likely that in future years more states will be participating in multi-state planning efforts that focus on transportation activities such as freight movement that cross state boundaries.

Tools – Much of the forecasting and economic estimation capability used in the freight sector has not been closely tied to the transportation planning process. Forecasting applications are often proprietary and thus not available to public agencies. Logistics models do not consider network performance at a state level as a key issue. Thus, there is a significant need for better tools that can examine statewide freight issues. Several examples of freight planning were discussed at the conference, but none included very sophisticated analysis tools that could

provide insight into freight trends or market changes. This was considered an important area for further research and development.

Data – Similar to tools, data availability was considered a serious problem. It was noted that efforts such as the Bureau of Transportation Statistics' Commodity Flow Survey would provide useful data to transportation planners, but the more useful data, that which indicates market growth and likely freight provider response, is and will likely remain proprietary. This is a significant challenge to statewide transportation planning.

Analysis Tools

There was much discussion on the role and current state-of-practice of analysis tools. Importantly, analysis was linked to the fundamental purpose of planning - providing information to decision makers. Therefore, as we develop better and more sophisticated analysis tools, we need to first ask ourselves the question of what information is needed and desired by those responsible for decision making.

Several topics surfaced in this discussion on analysis tools that merit attention.

"What If" Scenarios – There was a general agreement that one of the most desirable characteristics of analysis tools to be applied at the state level is the capability to conduct "what if?" scenarios. The example mentioned most frequently was the important information that would be produced by looking at the impact on mode diversions of investment in one state corridor versus another. This type of analysis could also be usefully extended to an assessment of such investment on economic activity (the outcome). There is a need for the development of analysis tools that provided such capability.

Integrated Data Sets/Geographic Information Systems – Analysis at a statewide level requires extensive amounts of data which are often collected by different units within a state DOT and by organizations other than the DOT. This data is not only necessary as input into the analysis of alternative system improvements, but also as a means of monitoring system performance. Many states are undertaking efforts to integrate the many different data sets available to state planners. One of the more common approaches is the use of geographic information systems which provide both data management capability as well as data analysis. Many conference participants felt that handling the multitude of data sets that provide important input into the transportation

planning process is one of the key technical challenges over the next several years.

System Monitoring – Linked to the concept of performance-based planning, system monitoring is an important element in statewide transportation planning. Providing some sense of how the transportation system is performing becomes a critical point of departure for identifying needed improvements. Such monitoring requires the identification of measures or indicators that have meaning for decision makers and for the analysis process. Analysis tools can then use this data to determine what effects changes to the transportation system will have on system performance. Many conference participants felt that state DOTs will be devoting more energy and resources in the future to system monitoring. Another aspect of such monitoring is the changing technology of data collection, perhaps as suggested by some piggy-backing off of ITS programs to collect realtime, dynamic data on system conditions.

Linked to Outcomes – Given the importance of outcomes to the decision making process, analysis tools should not just predict or assess the immediate impacts of changes to the system, i.e., number of vehicles, passengers, or tonnage that would now use an alternate route. Instead, analysis should provide some sense of what these changes will mean to such things as economic development, air quality, safety, and the distributional effects of moving traffic flows from one region to another. Most participants agreed that this linkage to the outcomes of investment is very poorly defined in current analysis approaches. In some sense, we do not yet understand the causal relationships, let alone have the models to analyze impacts. To be relevant to decision making, however, analysis tools must be able to provide such information.

Other Conference Issues

Three other issues were discussed at the conference that weren't easily categorized in the previous sections.

Corridor Preservation – Conference participants felt strongly that the ability to preserve rights-of-way for future transportation improvements was a critical element of a state's planning process. Suggested changes that would make the process easier ranged from adding flexibility to the financial constraint limitation to modifications of environmental laws that would permit corridor preservation. To many, being able to set aside right-of-way for the future was the best example of what statewide planning was all about.

Rural Issues – Some conference participants felt that more attention needed to be paid to rural issues in the

planning process. Others felt that such issues were already adequately addressed in the manner state DOTs were organized by districts and by the way the planning process occurred. To some extent, this issue was portrayed as primarily a distributional one, that is, are rural areas receiving their fair share of state transportation resources? Most participants agreed that such distributional issues needed to be part of the statewide transportation planning process. Similarly, concerns for Tribal Nations should also be part of this process.

Professional Skills – As state DOTs evolve from road building agencies to transportation system management agencies, the types of skills needed for this new role will be different from those in the past. These new skills include strong analytical (broadly defined) capability, consensus-building and negotiation abilities, system management and operations perspectives, understanding of technology, and strong communications abilities.

Chairman's Closure

This conference provided transportation professionals with a timely opportunity to assess the impact of ISTEA-mandated statewide transportation planning and to identify changes. Although state experiences varied across the country, there was general agreement that ISTEA-mandated statewide transportation planning has been very useful. Perhaps the best example of the importance of such planning was provided by Jeff Squires, Deputy Secretary of the Vermont Agency of Transportation. According to Mr. Squires, the statewide transportation planning process in Vermont helped clarify and focus the mission of the Agency, helped identify customers, and documented the financial limits and costs of needed improvements. The mark of success of this effort was the use of the plan by the legislature in developing the finance program for the Agency. In addition, Mr. Squires stated that based on Vermont's experience he would recommend that state DOT officials rethink the traditional focus on projects, extend the concept of partnership to implementation, collaborate with resource agencies at the program development stage, and adopt a multi-state approach to planning for goods movement.

The importance of these comments lie not so much in the substantive recommendations (which are quite innovative), but rather in the admission that the statewide planning process helped the state DOT learn more about itself and how it can be more effective. Several other state examples illustrated the same point. This is a true test of the value of planning.

ISTEA reauthorization provides a wonderful opportunity to fine tune the foundation for statewide

transportation planning that was established by Congress in ISTEA. This conference concluded that there is no need for massive changes in the general planning provisions. However, planning by its very nature as support for decision makers must be tailored to the specific characteristics of each state. This means that federal mandates should be flexible enough to allow such tailoring within the general construct of national purpose established by Congress.

Finally, although not explicitly discussed at this conference, I would argue that we are entering an era where many transportation issues are no longer just state issues. Rather, issues such as trade flows, air quality, and economic development often transcend state boundaries. We have already seen several instances where several states have come together to examine issues of mutual concern, e.g., the I-95 Coalition, the New England Freight Study, NAFTA Corridor studies, and the Crescent Study. We will increasingly need to look at transportation from a multi-state perspective. There is a role for the federal government in such an approach. This role could be as a catalyst, convener, funder of pilot studies, provider of technical guidance, or even as the study coordinator. However, it seems likely that the multiple state perspective will become a challenge to the transportation community, and to the institutional structure we have in place for such a perspective.

The following three quotations were taken from presentations made by three state DOT chief administrative officers. They provide a useful picture on the role for statewide transportation planning as seen by the users of the information provided. They also reflect the challenge and the importance of planning. If there was one theme heard throughout the conference presentations it was the need for public officials and agencies to be credible and accountable for the use of the resources entrusted to their hands. These quotes represent what three of our nation's key transportation decision makers

believe planning must do to achieve high levels of credibility and accountability with our customers.

Robert Martinez, Virginia DOT

"Collectively, we will need to learn how to plan for a much more market-oriented, market-based arena. In many respects, this will result in greater efficiencies of outcomes, more dynamism and greater depth, creativity, innovation, and a great robustness and availability of information, but it also means becoming comfortable with more uncertainty than what we have had to deal with in the past and learning to live with risk which is in the nature of the marketplace."

Sid Morrison, Washington DOT

"For me, the response to unparalleled cynicism is better plans . . . and we cannot forget partnerships with local governments. I am convinced that we are not going to build anything in the future that does not reflect the partnership with the regional plans that have been prepared under ISTEA."

Dwight Bower, Idaho DOT

"So what I am suggesting to you is that as you begin to look at needs, you have to set priorities. You have to be able to set priorities. You have to be able to talk in terms of outcomes. And you have to be able to make a commitment to those people who are going to pay that you are going to produce the outcome they expect. Now, that sounds real simple, doesn't it? But the fact is, most of us have said, give us more money and we will do more good things for you. That doesn't sell. At least, it doesn't sell in Idaho, and I don't believe it sells too well anywhere."

DINNER REMARKS OF GLORIA JEFF, ASSOCIATE ADMINISTRATOR FOR POLICY, FEDERAL HIGHWAY ADMINISTRATION

Allow me to preface my remarks this evening by saying that they do not represent the official positions of the U.S. Department of Transportation or the Federal Highway Administration. I was asked to reflect upon the current status of transportation planning and likely challenges over the next several years. I will do this primarily from a perspective of a transportation professional who has been in the business in different roles for many years. I want to talk about the transportation profession preparing for the 21st century. I have intentionally structured my remarks to be thought-provoking and controversial. Most critically, I want you to think about things "outside of the box."

I want to challenge some conventional wisdoms. The first is the contention by many groups influential in transportation policy making that a livable community is one where walking and/or transit friendliness characterizes the mobility options of the residents. This conventional wisdom envisions an American city where work, schools and recreational facilities are all within walking distance, or at most a short transit ride away. There is an abundance of open space, and exotic and common ecosystems coexist in a peaceful, passive and wonderfully supportive way with human beings. It is a place where economic conditions make absolutely no difference in the life styles of the residents of that city. This is not the urban America I know in 1996. One hopes it will become the American city of the 21st century.

As professionals, and for many of us as responsible government officials, we also need to recognize that rural America is important to this nation and that rural needs should be considered at the same level of equity as one considers urbanized area needs. We have become caught up in our profession in focusing on the needs of our metropolitan areas and have unintentionally relegated rural areas to a "back burner." Rural America is important.

What I would like to do this evening is to offer a top 10 list of policy issues and areas of consideration that will face transportation professionals in the 21st century. Let me start my list from the bottom.

Number 10: "*Transportation is not alone.*" Like those of us who are waiting for the premier of *Independence Day*, the movie, we are not alone and the aliens that we have to deal with are sometimes hostile, sometimes friendly, but always expectant and wanting. Transportation needs to consider its position in

relationship to a number of complex issues. While some argue that transportation policy and planning should not be held hostage to the resolution of social and economic activities, the reality is that as a great agent of change, transportation represents the single most effective way to get people to modify behavior.

And so the reality is that we are not alone. Transportation and the environment, transportation and land use, transportation and housing, transportation and urban form, transportation and economic development, transportation and life styles—all these are terms that we use in describing the world within which we live. The reality is that transportation is part of almost every social issue facing America. So, while we might like to think that transportation investments can stand-alone and that we should be able to make decisions in an independent fashion, we cannot. Dealing with these interrelationships is one of the key challenges for us in the 21st century.

Number 9: "*All the low hanging fruit has been picked.*" The easy and readily acceptable changes to our constituents have already occurred. Americans are now faced with being encouraged to do the things that they are not predisposed to doing. This is what I mean when I say "the low hanging fruit has been picked." Americans will have to make different and difficult choices in the 21st century. In transportation, these choices include how they travel, where they live, who lives next door to them, where they shop, where they work, what economic status they hope to achieve, and perhaps how much they are willing to pay for high levels of mobility. So, as we look at transportation solutions over the next decades, all the easy ones have been done. We are going to have to work harder, more creatively, and in all candor, put up with a whole lot more of whatever we did not want to put up with in order to find solutions. The one redeeming quality is we as a profession are some of the world's best problem solvers, so we are up to the task.

Number 8: "*Travel growth is good.*" I apologize to those who have argued against the negative impacts associated with travel growth, but I strongly believe travel growth is good. People shopping, working, receiving needed medical attention, visiting neighbors, relatives and places where they recreate or engage in enjoyable, safe and socially acceptable activities is exactly what we want in a vibrant society. We all support the idea that the world is better when we interact with one another. What we need to do as a profession is clearly define our challenges and articulate the problems in understandable ways. We want

growth to occur, but we want people to make different choices about how they travel. I come from a place where people stopped shopping near home; they stopped buying the products made in their home town. They stopped traveling. We want them to travel again. We want them to engage in those socially acceptable activities. However, we want them to change the way in which they do it. We want them to make different decisions about land use. We want them to make different decisions about when they need to go to the grocery store. Do they have a land use that permits them to take the two block walk or do they live in an environment where they have no option but to drive?

When one looks at the National Personal Transportation Study, we see that for the most part the rate of growth will begin to slow. This is true for the population as a whole. However, when we look at subpopulations with regard to driving, we find ourselves looking at a completely different set of groups than we have looked at in the past. Women and minorities are going to be driving much more. The question becomes how do they travel in ways that are different than we have had in the past? And more fundamentally, as we talk about controlling the growth of travel, do we expect these groups to forego all the advantages that those who went before them had by being able to travel when and where they wanted to? I don't think so. Our challenge is to get them to think carefully about how they travel, not if they travel.

Number 7: "*Immigration*" America is a country of immigrants. As a result, we are going to have very different expectations from many of our citizens of what the transportation system should be doing. I live in Washington, D.C. The only rule seems to be "get out of my way." Immigration will continue to be a significant source of population and workforce growth in the United States. The cultural diversity that this will represent to the U.S. will begin to change the norms and expectations of transportation. Our new citizens will not all have grown up having learned that the very first vehicle that they own is a single occupant one. So, as we begin to talk about being closer to our customers, we are going to have to recognize that our customers are different; they have different expectations; and they come from places where transportation works very differently. When we begin to shape the transportation systems of the 21st century, we need to bear in mind that it is not necessarily "more of the same". It will be very different from what it might have been if we had assumed that there was no immigration. Walking, transit, and rail could be viewed differently in terms of potential use.

Number 6: "*Integration as a key.*" The transportation system is composed of many different

modal networks. The system is intended to achieve a number of purposes and some of those purposes include permitting people to experience a lot of different activities. For example, there are some who were here this morning who managed to be home in Seattle to watch the Supersonics win this evening. There are those who are at the Supersonics game tonight who will be home before midnight in Salt Lake City. Transportation permits people to live these kinds of lifestyles. Such mobility, however, cannot occur without all modal elements of the transportation system working in an integrated and coordinated way.

Integration also involves moving goods, both finished and as part of the production process, and has to be efficient and timely. Freight movement must increasingly be discussed in the context of international movement of goods. Many products, from automobiles to transit buses to baseball mitts, are made in half a dozen countries overseas with final assembly occurring in the United States. We have to recognize that manufacturing and industrial production in the 21st century will increasingly take place on a global level and not just on a domestic level. Such a production process involves multiple modes all working in an integrated way. The flows will also cause increased sharing of transportation infrastructure by passenger and freight travel, further necessitating greater integration.

Number 5: "*Equity*" There are many voices crying out that we ought to keep things as they are, or that we ought to change things from what they used to be, or that we should not allow others to go places and do things that might provide some level of discomfort to the local community. I remember being a staff person at a regional transit authority and listening to local elected officials explain why a subway system could not be extended from the central city to their community. They considered transportation in and of itself as good; they liked the mobility; and they were not opposed to the cost. The problem was that "those people" could get on the system and gain access to their communities for all sorts of activities that were considered unwanted, especially crime.

But the reality is that equity questions with respect to transportation really do not focus around such people, but really around the question of how do we make sure that there is equal opportunity to live where one wants to live, to live with whom one wants to live, and to be able to take advantage of the goods and services that transportation makes possible in certain communities. It has to deal with an aging population—what do we do with an aging population that is accustomed to using automobiles and who will expect to continue to be mobile, in spite of all our efforts to say that driving a car at advanced age is not appropriate?. How do we design

transportation systems and its individual modal networks to make sure that they do not result in inequities because these people are not being given opportunities? How do we find solutions that are not income-biased or employment-type biased? How do we address life style choices so that the difference in male and female travel patterns are reflected in the solutions and address equity questions associated with gender differences? Men have it easy. They take nice long trips and they only take a few of them a day. Women tend to take short trips, and lots of them. Women are the ones who get the phone call when a child gets sick. Household errands need to be done, family members/friends require assistance.

Ultimately it comes down to the question of "Is transportation merely an ends to itself or is it a mechanism by which we create opportunities for people to take advantage of the American dream?"

Number 4: "*System performance*" We simply need to find measures that represent transportation system performance outcomes that people care about. As a profession we are very good at talking about performance indicators in terms of increasing the longevity of a particular pavement mixture and type; and that is great because we care about that in the profession. The general public really doesn't care, nor does the business community. What we have to do in terms of performance is to find indicators that represent outcomes that people want or care about and articulate them in ways that people care about and will respond to. Otherwise, we will increasingly find ourselves in the position of saying "yes, we spent your money and no, we can't explain what you got for it in ways that you care about." This means, of course, that performance indices related to productivity, market-share, employment and access must be developed. Outcomes must be described in terms which reflect the consumer priorities.

Number 3: "*Skill sets*" The folks who brought us the eighth wonder of the world, the Dwight D. Eisenhower Interstate System, are very talented. Let there be no doubt in your minds, their accomplishment is truly amazing. They have made us the envy of the world in terms of the quality, expanse, and technological aspects of our highway system. The real success was not because they were great engineers, it was because they were outstanding problem solvers. The problem was we needed a series of roads that interconnect major metropolitan areas and economic activity centers across this country.

That is what we said we wanted in 1956. They went out and delivered it. But the skill set that we tend to acknowledge them for is that of being technicians and engineers as opposed to problem solvers. So, when we move to the 21st century, we need to build on their strengths, which is their problem solving skills, and use that as the foundation for the new skill set of the transportation professional in the 21st century. Because as we talk about managing the system and protecting the investments that we have made, the skill set for the future transportation professional is going to include the ability to understand the context of transportation and the complexity of human needs; to recognize that there are multiple problems requiring multiple, interdependent solutions; to learn how to do simultaneous equations in a context other than story problems; and to understand how we implement transportation programs and activities that are primarily intended to influence behavior. We build on the foundation of being good problem solvers, but we must recognize that problem-solving is not just limited to technical analysis.

Number 2: "*Politics*" Transportation professionals cannot ignore the reality that in order to implement any kind of transportation action, no matter how great we are at solving problems, that we have to come up with solutions that are not only technically correct, but which are politically implementable and financially feasible. Our job in solving problems is to be able to address all three—technical, political and financial feasibility. We sometimes stop at being technically correct and we are learning better to be financially feasible. It is not doing one or the other but doing all three. If we accomplish all three, we will get the transportation program for the 21st century that we need.

Number 1: "*Proactive leadership*" We have to be proactive leaders. We cannot wait for the problems to stare us in the face and then organize to solve them. We are going to have to identify the problems, come up with creative, innovative, and in all candor different solutions than we have in the past. This, of course, is the essence of planning. As proactive leaders, we should be constantly looking for ways to make improvement. The motto of our professional forefathers was "if it ain't broke don't fix it." Our motto is going to become "it ain't broke, but let's make it better."

Thank you for your attention.

LUNCHEON AND KEYNOTE SPEAKER, FRANCIS B. FRANCOIS, EXECUTIVE DIRECTOR, AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS

This is a very important conference and is occurring at a very important time. All of our state DOTs have long been involved in statewide transportation planning for highways. Many have been involved for a long period of time in other transportation modes as well. Of course, now we are working with the ISTEA and the new planning requirements placed upon us. Another reason this conference is important quite obviously is that we are on the verge of reauthorization activity in the Congress. So, there is no better time to talk about a lot of the critical planning issues that we all face.

I want to talk about three topics today. First, where is AASHTO with respect to planning, and with respect to multimodal transportation systems? What do we think about them? The second topic addresses some of the challenges we face as we look ahead on the issue of statewide transportation planning. Finally, I want to talk a little bit about reauthorization.

We express our policies within AASHTO in several ways. At the top level is our national transportation policy; below this is a series of transportation policy statements; and below this is a series of policy resolutions. For any of these to be effective, they must be adopted by at least two-thirds of the member departments of AASHTO. So at least in theory, everything that is in any of those documents has strong support from the bulk of AASHTO. Our national transportation policy provides us a vision of what the nation's transportation system ought to be. Let me read a paragraph.

"The national transportation system should involve all forms of transportation in an interconnected manner, including existing highway and transportation facilities and transportation systems of the future. The objective should be to provide mobility, while striving to reduce congestion, energy consumption, and pollution. This objective will promote economic development, improve the nation's position in international commerce, preserve and protect our investment in our transportation system, and enhance quality of life, including social and environmental aspects."

In this same document our planning statement talks about intermodal transportation systems.

"The national transportation system must provide adequate options, easy access and transferability among all

modes for the most timely and cost effective movement of goods and people."

Then we talk about program flexibility.

"The transportation programs must reflect the varying needs of the population in providing flexible transportation services. Programs should emphasize a shared responsibility of all providers to prioritize based on needs, rather than on allocations....Programs should be structured to allow the maximum degree of flexibility and funding and program implementation possible to provide transportation services, as well as address conductivity, urban mobility, suburban congestion, rural access, movement of significant commodities, international trade, environmental protection, safety, and economic development and growth....Decisions should be made by the public and private enterprises responsible for transportation facilities and services, with public involvement."

So this is really the bottom line. What does it all say? It says three things really. Our goal should be a comprehensive transportation system; a transportation system that is intermodal, and a transportation policy and planning process that provides flexibility in how we go about doing it. All of this then is what transportation planning is meant to help bring about.

Some recent policy resolutions put AASHTO behind the deployment of basic ITS services for consumers of passenger and freight transportation by the year 2001. There are three goals. First, the private sector will lead in the development and the bringing to market of reliable and affordable intelligent transportation systems. Second, the public sector will lead in the deployment of core ITS systems to meet essential public needs, forming innovative partnerships with the private sector where appropriate. Third, the ITS strategies developed and deployed will be integrated, interoperable, and intermodal. It seems clear to me that planning in each state should take into account ITS activities.

With respect to reauthorization, AASHTO has been very busy with a reauthorization steering committee. We have developed several documents and adopted them by the board, by that same two-thirds vote. These documents will guide our activities as we move forward into the reauthorization period. The Standing Committee on Planning of AASHTO was deeply involved in developing

the statements that were ultimately considered and adopted by the board. Some of these statements have not received widespread endorsement; some of them have, and that is to be expected. What we have done is to try to outline where the state transportation agencies are on a number of issues. Now, if we were writing the legislation, that would be the end of the matter. Of course, there are a few other players.

Here is a brief summary of AASHTO recommendations on reauthorization dealing with several topics: financing, planning, environment, research, and the federal, state, and local roles. In the planning arena there are four basic points. One is to redirect federal regulations away from sanctions and mandates. We believe they are counterproductive, that they do not serve the function for which they were intended, that quite frequently they do not go after the people that are really responsible for the actions involved, and that generally we could function better without them. We want to simplify and reduce the number of federal regulations and clearances needed for transportation program delivery. We believe in planning. We want to see it done, but we want to see it done effectively, and with as little unnecessary red tape as possible. Why go through three or four different processes, when one will do basically the same thing?

We want to eliminate funding for demonstration projects and reduce set-asides and set allocations. Basically, what this says is we ought to let the planning process control the situation. That is what ISTEA called for. ISTEA, at least in theory, was to move decisionmaking out of Washington, back to the states and local level, with decisions being made in a revitalized, enlarged planning process. We agree. Let's make that planning process work, and let's make it responsible for all decisions and stop unnecessary set-asides. Now there may be set-asides needed in some areas, perhaps safety, for example, but they ought to be carefully thought through as to what we are trying to do and why we need it at the national level.

Another point found in our resolutions is to streamline federal regulations and reduce overlap. As scarce as funding is, we need to be certain that every dollar we use on planning is properly used, and that we are not doing something many times.

We have recently adopted a document called, "The Bottom Line Report II," which builds on a similarly entitled report we did years ago. There are four key recommendations in this report that affect everyone at this conference. The first one is that transportation programs should be fully funded, and that the 4.3 cent per gallon federal fuel tax now going to the general fund should be placed in the highway trust fund. We know from our analysis that 4.3 cents would just barely allow us to

maintain conditions. It will not give us a lot of new money. However, it will allow us to do some things that need to be done in both highways and transit. It was a way to express ourselves as to the added funding needed. This would not be a new tax, because it was already being collected. What we now want to do is to move it over to where it belongs in the first place.

A second key recommendation is that state and local governments should be given more flexibility in determining how, when, and where transportation resources are spent to maximize the benefit in mobility, safety, and the environment. Again, we are back to the planning process, which is key to making all of these things happen.

The third point retains many of the current provisions of ISTEA such as state and local cooperation, intermodal planning, and public participation. Some groups have interpreted AASHTO's positions as taking us back to the 1950s. This is not true. We support most of what was achieved by ISTEA. We would like to see some adjustments made in various places, but we think overall it has greatly improved how our nation's transportation system functions.

The fourth point focusses on some of these adjustments—burdensome and unnecessary provisions imposed by ISTEA and in earlier laws should be eliminated or reduced. Of course we have already had action on some of these things. One of my favorites is the crumb rubber addition to asphalt. This was repealed in December. The mandatory nature of the six management programs was also repealed. Many guessed that the management systems would just float away. This has not happened. The states developed many of these management systems and used them before ISTEA passed. In a recent survey by the Standing Committee on Planning many states report that the management systems are still in place and are being used, but they are not the data heavy devices that the regulations called for. This is not what Congress meant in the first place; so we are now back to a more rational approach.

Another document that is very important for AASHTO is the one that defines the federal, state, and local role. To quote again,

"State and local government entities are the owners of the public transportation system, and are directly responsible for its maintenance and operation. The federal government owns a relatively small portion of the system, and provides only part of its funding....Second, under direction of the governor and the state legislature, states are responsible for providing leadership in developing transportation policy, which brings together all the partners....Third, federal legislation and regulation set broad goals and do not dictate

specific solutions which unnecessarily restrict state and local decisionmaking....Fourth, federal transportation policy should be based on a partnership arrangement which fosters involvement and cooperation between federal, state, tribal, and local officials."

AASHTO believes in a federal role. AASHTO has defined what we think that federal role needs to address. AASHTO says there is a role for planning, but we are concerned about some of the processes that have been put in place. We think they can be fixed—must be fixed—to make it work well. The bottom line is that ISTEA works. It needs a few adjustments here and there. It has in it many things that AASHTO fought very hard for, e.g., additional funding, the national highway system, and funding flexibility.

Planning generally has worked well. We are stronger than we were before ISTEA within states, and at the regional level. So, we now look ahead to where the next bill goes. What are some of the challenges that we face? I will suggest the following.

The first challenge is establishing a truly comprehensive transportation planning process in every state. Yes, we have come a long way, but we are not there. By this I mean each state has to devise its own comprehensive planning process that recognizes the geography, politics, traditions, and needs of that particular state. We cannot sit in Washington and write a process that will work in every state. We have to create it. It also needs to be a process that recognizes at least for now, and perhaps into the indefinite future in some states, the highway system will dominate that process, because it is the basic transportation network.

We also need to recognize that over time our comprehensive planning process must address all passenger and freight movements in all modes. This to me is the goal we ought to be working for. It will not be easy to achieve. Some states are closer to it than others. Until we accomplish that, we are not doing what we say we are trying to do—comprehensive transportation planning. Now make no mistake, each state government influences transportation in all modes, in one way or the other, and in several different places. Decisions on what we build and don't build are made by states, cities, counties, transit agencies, and toll authorities operating under state law. These decisions are being made right now. Some state transportation agencies are involved with all of these; some are not. Ultimately, we should be involved with them all.

Of course the private sector makes many transportation decisions also within the state, particularly on how the facilities are used. We need to have linkages with such groups. There are operations decisions made in every state every day—police and fire departments, and

emergency response people are all making decisions on how our transportation system functions. There are regulations that we impose on the vehicles, drivers, registration, weight, and a whole lot of other things. States also make decisions on the level of funding and the uses of that funding. These are made through the office of the governor and/or the state legislature, city governments, county governments, and elected officials at various levels. We have land use decisions being made that affect transportation and are affected by transportation. Mostly they are made by local governments, but they are again being done under state law.

To my knowledge, there is no current state department of transportation that deals with all of these, although many deal with a lot of them. Our challenge is to work for the reorganization of each state to comprehensively address all of these transportation issues in the context of the other programs that the state works with, particularly economic development programs. It is a big challenge. One of the ways that we can is by reorganizing the state DOTs themselves, and some of this is happening. The Iowa and Maine DOTs are two I would pick out as examples of new ideas. Maine is probably the most interesting. It is now organized around passenger movements and freight movements, regardless of the mode. That calls for a different kind of thinking than we have seen elsewhere. Whether it will work or not, time will tell, but at least they are trying.

Meeting this challenge also means a lot of liaison work. Many of you do this; those that don't, should. The responsibility for this probably lies at the top of the agency, but I suggest that the agencies themselves need to organize themselves in such a way that there is continuity and expertise in these activities. Liaison needs to occur with your state legislative committees—the budget committee, the ways and means committee, the capital program committee, et cetera. Liaison needs to occur with your local elected officials, particularly through their organizations. I believe it is the responsibility of every DOT and the planning groups within DOTs to be working on an ongoing basis with your state municipal league, not just on state issues, but on national issues. That's how you get understanding at the national level. County associations are pretty independent, but the counties are important. And of course your MPOs and MPO organizations. On the business side, we need close connections to the chambers of commerce, various business organizations within your state, and with the political structure, Congress, et cetera.

In all of this we must learn to think in terms of election cycles. If you are elected to a four year term, you are really open to new ideas during your first year. The second year will focus on getting these initiatives started.

When you get to the third year, well, we'll think about it. In the fourth year, "not in my election year." If you don't think in terms like this, it is very hard to make things happen.

A second challenge is developing effective, inclusive planning processes within each state. Again, we have come a long way. Under ISTEA, I think we have seen a lot happen. We have citizen involvement and hearings, but we need to do more than that. We need to look at the roles that the different players play, and get more involved. By this I mean working with your cities and your counties. Call it partnering if you will. Partnering implies giving something back. You may not get that. There is a big role out there simply working with them in developing transportation into a more effective system. The states that have been using the new public hearing process have found them very useful. A lot of good things have been happening out there. We need to keep working.

A third challenge is to develop and implement training and new tools. We need to know what data we need. We need to get it collected somehow, and learn how to analyze it. Then we have to train people to use it. What people? A lot of people. Ourselves first of all, quite obviously, but also people in cities, counties, and MPOs and any other organizations that want to know how the processes work. We do a pretty good job in our research. FHWA is doing a lot of research right now on new modeling approaches. Let's make sure that we put into place a process that will spread that knowledge and train people on how to use these things. Without training, they are not much good. Who develops the training that we need? Well, this has been a traditional role for the Federal Highway Administration in the past. The National Highway Institute and the Federal Transit Administration are both deeply into training programs for planning. No less than 31 courses are now being offered and another 14 that are being planned. What are the hurdles in actually utilizing these courses? One of the hurdles is cost. FTA does it for free basically; why doesn't FHWA? Primarily because of the federal law; maybe this is something we need to change in ISTEA. We don't need prescriptions. What we need are descriptions of what works.

The next challenge is how to better link transportation planning and land use. This is one we are going to be wrestling with I think in the next bill. I'm not quite certain what Congress can do, but they are going to talk about it quite a bit. Notice I asked, "how do we better link," because all of you are already affected by, and are reacting to, land uses. That is why you build facilities. Many of your public/private partnerships are centered around making a land use possible.

To a very great extent our DOTs have been responsive and reactive mechanisms. The problem is created, and then you have to solve it. We need to turn this around. This will not be easy, but some states are trying. We need new ideas, new concepts, and it means that the state is going to have to take a heavy hand ultimately against local governments—and I use the word "against." I sat on the County Council of Prince Georges County as a zoning official for about 14 years. In that period of time I helped to decide a little over 5,000 zoning cases, so believe me, I know what this issue is all about. I know how those decisions are frequently made. For the most part your elected officials are doing the best job they can. They are trying to respond to conditions as they see them. We must educate them as to what the impacts of some of these decisions are, and what the alternatives are.

In my career in public office I helped to write an adequate public facilities ordinance with respect to water and sewer, and it worked very effectively. I also wrote one with respect to adequate transportation. The first judge that saw it, threw it out. What could another 20 cars do to that highway? We didn't sell it right, obviously. We must find ways to link these things and to get the transportation system better tied to development itself.

Another challenge will be to move more toward a systems approach. Going back to AASHTO's policy statements, we are talking about a multimodal system. The state planning process needs to think ultimately in terms of a system, one that addresses all modes and everything that happens in those modes. We are moving that way. Some of the corridor studies we are doing are quite good, but I would remind you they are corridor studies. We are looking at them one at a time. We are not looking at the whole system in most metropolitan areas. Nor are we looking at what the relative possibilities of transit and highways might be in that corridor, particularly if you change land use patterns. What would happen if you use access controls? How do you maximize the use of those public dollars and private dollars that are being used for transportation unless you look at the system and all the concepts involved?

This is obviously not something easy to do. We need more skills and more tools to make it all work, but I think we need to move in that direction, because that's the way people think. You ask a man who runs a business, how are you going to ship these goods to me? He doesn't really care. He wants them moved from A to B by a certain date.

Many passengers are the same way. People in the real world tend to think in terms of the system, and what it will do for them. We tend to think in terms of highways and transit, yet we call ourselves departments of transportation. We say we are doing comprehensive

transportation planning, yet in many cases it is just modal planning stapled together into a systems plan.

Perhaps the greatest challenge in the years ahead is gaining, or perhaps regaining, public support, or perhaps regaining support, for transportation planning. A lot of people don't really believe we know what we are doing. Unfortunately, we have helped feed that over the years with extended needs studies that run ahead 20 years, and which identify funding requirements that will never happen. We feed the skepticism by saying we can deliver a product three years from now when we know darn well the funding isn't there, and we can't get it done. Credibility is the key word. We must work in such a way that the planning process becomes more credible. As it becomes more credible, it will get more support, and it will guide more activities. Part of the problem here is linking programming and planning. How many decisions are based on planning? Now I know this is not your problem. This is a political problem. It's a state and local governmental structure problem. It is an elected official problem. It is a citizen problem. But if we work with all these groups and build a process that works better and that is credible, they will start to follow it, and then we should get closer to where we want to be ultimately.

Our goal is to satisfy what our customers want and need. To some extent we must educate them as to what it is they are trying to do, and what they really need. Again, that is part of the planning process. Does all this education work? Will it really change things? In my county and running south from it we have what is known as the US 301 corridor. Over the years there were many civic groups and civic leaders who were against any effort to make changes in this corridor. The Maryland DOT put all of them on a committee and educated them. They received education on access controls, how they can control land use, and preservation of corridors. All of the major groups agreed to a plan that a year ago I would not have believed was possible. This plan will guide transportation development in an extremely important corridor of Maryland. Educating the public was the key.

So, yes planning is valuable. Yes, it takes time. Yes, it requires negotiating skills. Yes, you are becoming a facilitator. Probably any planning curriculum that doesn't spend a lot of time on facilitator skills is totally out of date at this point. If you don't have them in your agency, you had better get them. The same is true, I might add, of our civil engineers who have to think beyond civil engineering. We must learn to facilitate decisions with people, and to work with people more than we have in the past.

The final challenge quite obviously is to secure adequate funding. If we don't have adequate funding, it really doesn't make much difference what kind of a

planning process we have. It won't be credible, because we will not have the resources to carry it out. Funding is a tricky issue. We know that there are limitations at least for the next several years on the level of federal investment in transportation. We don't know how serious this will be ultimately, but this Congress has said that over the next seven years we will drop from a level of about \$38 billion in federal investment in transportation to \$32 billion. This includes everything—aviation, highways, transit, rail, et cetera. If we do that, the supply curve is going down, while transportation demand is going up. This means you can't do it all with federal assistance. This implies more state assistance, more local government fundraising, public/private ventures of various kinds; innovative financing, and public/public ventures. Learning how to do those things will require a new set of skills. How do you integrate those into your planning process in such a way as to be equitable to all the people that you represent? Do you let all of your decisions be based on whether the private sector is putting money into the pot, in which case those portions of your state that are less wealthy will not get what they should probably get otherwise? These are value judgments that you are going to have to learn to make, and they are tough ones.

We keep talking about full funding of ISTEA. Full funding wouldn't solve our problems either. We need far more money than ISTEA makes available to really do a credible job in our transportation system.

Now let me just talk a little bit about reauthorization. It is possible that the House will have a draft bill by October or November, but the chances of a bill being passed this calendar year are essentially nil. This means then that 1997 is the year of reauthorization, or perhaps I should say the year when reauthorization activities will begin. Will they get done by September 30? Probably not. It would be the first time if they do. So it will probably be early 1998 before we have reauthorization legislation. What all this really means is that the cast of characters may well change. It is the next Congress, and possibly the next president that will write this bill. If the White House that we now have is still around, then the activities that the USDOT is now heavily engaged in could be very important. The hearings that the USDOT is holding will gather a lot of ideas which will result in a bill being presented probably with the budget in January. This is when it will be officially seen. What will happen at that point? Well, there are a lot of ideas; everything from full turnback of the program to a partial turnback, to money only for the Interstates, to let's keep ISTEA the way it is, et cetera. The bottom line is how much money? who gets it? and what do we use it for? That's what the bill is really all about. How much? If they stick with the balanced budget, it will be less. If it is

less, then the kind of formula adjustments that a lot of states want will be very difficult to do, because you will have to take the money away from somebody else and give it to the folks over here. If you have more money there will be many new ways of dividing it.

The bottom line that we need to keep in mind is that these are federal dollars, not state dollars, not local

government dollars. None of us have a right to them. Congress will decide which portion goes to the states, which portion to local governments, and which portion will be controlled by MPOs. State planning, in such an environment, will be even more important than it ever was.

OPENING PANEL

ROBERT E. MARTINEZ, VIRGINIA DEPARTMENT OF TRANSPORTATION

“Over the past 40 years the nation has witnessed a great expansion of the federal government's involvement in transportation. The current federal role in highways, originally intended to be of limited duration to meet immediate post-war needs, has outlived its mandate and has become a barrier to sensible decision making.”

“The nation's mass transit systems, which provide local transportation services, are dependent on the U.S. Treasury to finance construction and to subsidize the travel of almost every transit commuter in America. In aviation, the federal role of insuring the safety of the skies has expanded to include programs that assist in buying runways, taxiways, and terminals. Federal involvement in inter-city rail travel has delivered a near-bankrupt corporation, running on a dilapidated infrastructure and desperate for federal aid every day to survive. There is even a federal program for enhancements such as bicycle paths. In every instance, federal aid has occurred with regulations and requirements that have increased costs. This has necessitated more federal aid and has led to greater dependence on the federal government. Needs now far exceed federal resources in every mode of transportation.”

“During the creation of the federal aid highway program in the 1950s, highways were still considered the province of the states and localities. Although it was designed to be a federally assisted state program, the federal aid highway program has evolved into a highly prescriptive, regulated, earmarked, Washington-directed program. To a great extent, states and localities decide which roads are constructed, but the federal government prescribes how much of the federal aid can be spent on Interstate construction, maintenance, congestion mitigation and air quality programs, bridge replacement, rural access, urban access and mobility projects, scenic byways, and a myriad of other programs.”

“The highway program is financed through excise taxes, principally the gasoline tax. The federal government collects the gas tax, diverts funds for earmarked projects, skims off more to pay for the federal highway bureaucracy, runs the remainder through a complex web of programs and then returns the money to the states. This process is so inefficient that some economists estimate that the purchase power of each dollar sent to Washington is deflated by at least 25 cents. On the positive side, over time, this structure has enabled the construction of the

Interstate highway system. But that system is now complete. Now, states are faced with billions of dollars worth of unmet highway and bridge needs and a federal system that hamstringing their efforts to rehabilitate America's infrastructure.”

“We need to introduce ideas that would harness the ingenuity of governors, state legislatures and local governments, the entrepreneurialism of private industry, and the strength of financial markets to enhance the nation's transportation network. This is not to suggest that there is no federal role in transportation. It merely recognizes that federal involvement in many instances has been counter-productive and has precluded other non-federal ways of doing infrastructure improvements.”

I know that many of you are thinking that this is just Rob Martinez talking. However, everything I have said so far, verbatim, is from report language by the House Budget Committee attached to the House concurrent Resolution 178 on the fiscal year 1997 budget. As far as planners are concerned, change is here and I greatly suspect more is coming so we all best get used to it.

Let's step back for a moment and see what has transpired in the recent past. In late 1995, we achieved passage of the National Highway System (NHS) legislation. AASHTO and other participants in the transportation arena, many of them represented here today, should be justifiably proud because the NHS is landmark piece of legislation. However, at least in Virginia, I could not get the media to realize that enactment of the National Highway System was not simply a provision to eliminate the federal speed limits. It was actually the inverse of that. So yes, the NHS law was landmark in achieving system designation. But it was landmark in another regard as well and that is in the modest, but nonetheless significant, step taken toward a much more federalist approach to national transportation policy—for example, the elimination of the national speed limit and the elimination of the metric signage requirement.

There was effective elimination of Section 1038, the mandate on crumb rubber and asphalt. That was an example of policy thinking at its worst. In Virginia, the result was we had asphalt that was twice as expensive and less durable. Additionally under Section 1038, it mattered not at all from the federal perspective that in a single project in Virginia we used up virtually a half year's supply of used tires in the roadway embankment. But if you didn't put it in the asphalt, it didn't count.

Finally, and a very important point from the planning perspective, the six management systems were also made voluntary. The congestion management system remains a requirement in non-attainment TMAs. And the TMS is still required. These systems should also be optional. At least among members of AASHTO's Standing Committee on Planning, we continue to have concerns about the involuntary character of these remaining requirements.

I genuinely do not mean this as a partisan statement, but merely as an objective, analytically defensible observation. I don't believe the National Highway System would have come out quite as federalist as it did had the U.S. Congress not experienced the historic party somersault occasioned by the November, 1994 Congressional elections. Again, from a straight analytical perspective, given that 1997 will be the year for reauthorization of surface transportation, this is a very important issue, a very important perspective.

In my personal view, this more federalist approach is here to stay, but with an important caveat that the outcome of the 1996 elections (and perhaps more from a function of the Congressional elections rather than the presidential) will have a pronounced impact on the nature of what we are likely to see in ISTEA 2. For example, with reference to the budget language I read previously, does anyone seriously think that the 103rd Congress could have produced anything like that? However, again in my view, even if the Democrats retake control of Congress, unless there is some sort of absolute intervening cataclysm which is not now foreseeable, I do believe that a transportation policy will remain on a more federalist track than it has in the past. Why? Both parties are railing against unfunded mandates, so even Democrats are running on a more centrist or a more conservative platform. But more importantly, the days of easy and big money are over. I'm sure you didn't realize that these past few years you were living in the era of flush cash. Well, you were, but now it is over. When money is flush, lots of unfunded mandates may still be objectionable philosophically for us in the state but you hold your nose and swallow. But when money is tight (and you haven't seen anything yet in my view), you can't afford unfunded mandates. It is as simple as that.

So, in ISTEA 2, I would expect more rather than less change in the number and rigidity of sub-allocations, set asides, and earmarks and in particular look to a great deal of weakening in the arena of sanctions. From a federal perspective, removing sanctions is ideal. You get to keep that feel-good mood about dictating how things ought to be, but all the teeth get knocked out of enforcement so the states, MPOs and others get the real message.

I hope transportation policy will move in the direction in which federal agencies are increasingly ever more in the role of partners rather than of regulators. But even in many areas of regulation which must remain, a great deal would be accomplished if at least the planning approval process were streamlined by eliminating the drawn out, multi-agency approval authority. At least within USDOT, the individual agencies are saying the right things.

With a move to a more federalist national policy, I expect that even in arenas deemed appropriate for the federal sphere, we will see a greater appreciation for the fact that one size does not fit all. And, as in the National Highway System, with the diminishing availability of funds, I expect a continuing decline in the frequency of demonstration projects. We should find ourselves internally controlling a larger proportion of an admittedly much-reduced pie. You will see that is the ultimate justice being meted out to states' rights proponents like myself. So, those of you on the other side of this debate can be justifiably smug. Yes, you can control it but so much less of it is there. Of course, I am only kidding on that point.

One final area that I would like to address which also has ramifications for planners. In this world of decreasing federal funding, we have to accept the notion that funding of major infrastructure projects in the future will not occur as it has in the past. The funding of major capital projects will change. In particular, look for a much more extensive role by the private sector. This is not a partisan statement.

As planners, you all have to struggle with what constitutes the right balance. You will continue to have many projects that will be funded the good old fashioned way, but I think the nature of things to come will be that every project will be different. You will see also a lot of mixed public and private financing and funding. You will see some private projects that will be essentially all equity. You will see some private projects that will be essentially all debt. You will see publicly guaranteed lines of credit in cooperation with the private sector to move projects forward. You will see the public funding of portions of project start-up costs and the use of binding agreements with the private sector to complete the project.

Collectively, we will need to learn how to plan for a much more market-oriented, market-based arena. In many respects, this will result in greater efficiencies of outcomes, more dynamism and greater depth, creativity, innovation, and a greater robustness and availability of information, but it also means becoming comfortable with more uncertainty than what we have had to deal with in the past and learning to live with risk which is in the nature of the marketplace.

So my advice and counsel is to tighten your seatbelts, worry less about sanctions if you choose not to buckle up, but brace yourselves for the changes that are headed in our direction.

SID MORRISON, WASHINGTON DEPARTMENT OF TRANSPORTATION

I was asked to discuss the role and value of planning in my organization and for the types of decisions that we make for the State of Washington. Let me preface my discussion with a few words of what I found when I became Secretary. The most important surprise to me was the sorry state of affairs with state and local revenue structures for supporting transportation. I knew it was bad. I always voted for transportation funds as a member of the legislature, but I didn't realize really how deficient this revenue was in face of the transportation needs for the state. The second surprise was the value of planning for the types of decisions we had to make. I feel very strongly about the important role for planning, and I think ISTEA took us in the right direction.

Another aspect of transportation that came as a surprise was the strong tie between economic vitality and transportation/ mobility infrastructure. It is very clear that the two are intricately tied together, and will be more so in future years. The opportunity for partnerships with many different groups in Washington State was also a new concept for me. In fact, maybe I should change that to the necessity for partnerships. The final surprise of my becoming Secretary, even though I had been in elective office for almost 30 years, was the level of cynicism that I found among the public. All of a sudden I was the general in charge of the enemy. I didn't like that.

Along with these surprises, however, came a certain pleasure at inheriting an agency that had a progressive attitude on ISTEA from the very start. Maybe even more important than the professionals who embraced the philosophy behind ISTEA was the strategy they adopted of getting all the stakeholders together and jointly defining the process of how we were going to implement it. We put out one of the first, and one of the best, ISTEA handbooks for local governments which resulted in these governments becoming enthusiastic players from the very beginning. Just in the last couple of years, we have published copies of our tribal government handbook for ISTEA as we work with these important constituencies. I find that every bit of this outreach has paid off by giving people a sense that they are part of the process.

The State passed a Growth Management Act in 1990 which provided an interesting juxtaposition with the intent of ISTEA. Transportation planning and growth

management were now mandated in all areas of growth within our state. This combination was perhaps unique in the country, and although it gave us some anxiety, it also gave us some enthusiasm for linking regional transportation planning organizations defined under growth management with MPOs under ISTEA. We face very rapid growth in Washington State. We have had a 50 percent population growth in the last 25 years with 50 percent more coming in the next 25. We also have a rather tough political environment in which to make things happen.

Let me now concentrate on what I see as the changing environment for statewide transportation planning. I mentioned already my surprise at the level of unparalleled cynicism that I found in the transportation arena. For me, the response to unparalleled cynicism is better plans. You must focus on planning that much more because of the shortage of resources. A good example of how this cynicism has manifested itself in government is in term limits. They do not work well for activities of government that require long term investments like transportation. When I first went to the legislature in the 1960s, you had to wait for somebody to die to get on the transportation committee. The committee members were always there. It was their hobby; their love. They knew every highway, every classification, every category, and the depth of asphalt on every stretch of the state's highway system. This just doesn't happen anymore. For me, the prospect of term limits requires better and consensus plans, because you have got to overcome the tendency of new legislators saying that those are not my plans. We need something that is really locked in and is supported all the way through the government.

For us, mode choices are going to be part of a changing environment. This is where the plan really works because conventional wisdom says that investment must be thought of as highways versus transit versus rail versus ferries versus air versus rail freight—a competition of the wide range of modal investments that are out there. But the trade-offs between these modes and where you are going to invest your time and money must be based on very accurate and thorough planning.

Just to give you a clue as to where we are, I just signed an agreement to buy and build in the State of Washington two Euro-style train sets. These train sets are \$8 million apiece. And talk about federal partnerships. The federal partnership played a critical role here. Amtrak liked so much what we were doing that they decided to buy a train set on our contract, so three new train sets will go on our already successful intercity passenger runs from Seattle north to Vancouver, British Columbia and south to Eugene, Oregon. By the way, the run from Seattle to Vancouver, British Columbia this last summer returned 95

percent of the costs through the fare box, so I think Amtrak can work if you offer people what they want. That again, is an element of planning. We will launch the first of three new jumbo super-ferris in August, a total investment of \$240 million. These, of course, are our highways to the west in the Puget Sound area. An agreement on a new prototype passenger-only ferry will be reached very soon, 350 passengers, 35 knots of speed. As Secretary, I am on a board that will take to the ballot this November a proposal for a new regional transit authority that could build a light rail system. Commuter rail in the Puget Sound area, and 340 miles of HOV lanes which are partially complete, are totally the responsibility of the state government.

Organizationally, I have had the delightful experience of changing the name of one of our service centers to the environmental and engineering service center and bringing in some people who decided that rather than fight the regulators, we would outsmart them. We would do this by first of all knowing the regulations they had to enforce better than they knew them, and then build our environmental requirements into planning at the very beginning. We plan now to avoid those permit delays by considering everything we have to early on. It is part of the scoping process. And let me tell you it works.

We have some inspired people within our agency as they see these pieces fit together. I consider it all a function of planning. Partnerships with agencies and with business are a key to our future success. We just opened the world's fanciest rest area with Weyerhaeuser Company paying \$6 million and the DOT paying a couple hundred thousand. Weyerhaeuser wanted a forest learning center and where better to have a rest stop than in an absolutely luxurious and informative setting. And we cannot forget partnerships with local governments. I am convinced that we are not going to build anything in the future that does not reflect the partnership with the regional plans that have been prepared under ISTEA. This will often include local governments reaching into their pockets to find the revenue that is needed to implement the plan.

New tools will be an important characteristic of the new environment for transportation planning. We are getting rave notices for our use of the Internet. Internet for us has become a wonderful tool. As we went to the public in our new public involvement program on the new state transportation plan, we used many means of outreach. One of the most successful was the Internet. People want to help.

I just went through the list of the 10 largest businesses in the last year that decided to move to Washington State. Seven out of the ten came because the locations they were coming to had in place comprehensive

plans, plans that related not only to transportation, but to a host of other things. These companies mentioned that such planning was important in the decision to move in that it proved that government can make things happen in the local area. By the way, the three that did not mention planning came for resources reasons. If you are building a pulp mill, for instance, you need to go where the trees and the source of pulp would be. These were not small companies, e.g., Intel with 6,000 or 7,000 employees and Taiwan Semiconductor with a \$6 billion investment. These are the folks who really know what they are doing and could go anywhere in the world.

The other part of the changing environment for transportation is a strong swing politically to the political right. When President Eisenhower led the charge to build the Interstate highway system, he really created the first contract with America—the highway trust fund. Now things have gone awry because there is insufficient revenue to do the job. In looking at the total transportation picture, we had a plan and didn't stay with it. Much of that money now has been diverted elsewhere and as I look at the sum that goes elsewhere, I see what could have been built. The moral of the story is that if you have a plan, please stay with it; otherwise the cynicism for government just continues to grow because you enhanced unfulfilled expectations.

I am delighted to have this chance to be with you. Please, if there is a bottom line to what I am saying after my three years of observation is that planning is the essential part of whole process as we face the changing environment of the future.

DWIGHT BOWER, IDAHO TRANSPORTATION DEPARTMENT

Let me begin by telling a story about Ray Mickelson. Ray and I are both fly fishermen and we truly enjoy fishing. We had planned all week for a trip to go to a lake. We read all about it. We had done all the right things that planners are supposed to do. We had obtained all of our base level data, we had extrapolated and we knew what flies to use. We arrived at our starting point at 5:30 in the morning and Ray said, "We are not going to that lake. We are going to go to this other one." We spent the entire day at this other lake, but we didn't catch any fish. As we were driving home, I said to Ray "You know, something just really baffles me. We had planned all week long to go to this other lake where we had determined that the fishing was excellent. We had our flies figured out. But you changed the plan and we went to this other place. Could you share with me what happened?" He said,

"Well, you gotta admit, the plan was great. The problem was in the execution."

As you think back in the history of the United States, one of the truly historic and heroic events was the Lewis and Clark Expedition. Lewis and Clark started in Charlottesville, Virginia and ended in Seaside, Oregon. The fact is, they spent a lot of time preparing for that trip—Lewis and Clark, President Jefferson, and all those who were involved in putting that trip together. The whole idea was to find a water passage to the Pacific. They were the first expedition of non-native people to ever come through Idaho in 1805. The Oregon Trail crossed Idaho, and from 1840 to 1860, 53,000 people—families, women, men—looking to the future, crossed through the southern part of Idaho on their journey. If any of you have read the history of the Nez Perce Indians, an Indian tribe located in Washington and Idaho, you know that their chief, Chief Joseph, came to the conclusion that he really didn't want to live under the American flag. So, he decided to lead his people to Canada where they could be free. They traveled nearly 1,000 miles on foot, engaging in four major battles along the way, suffered many losses through starvation and exposure to cold and made it to within 40 miles of Canada. But they didn't make it. The famous words that Chief Joseph said when he was captured by the military 40 miles from the Canadian border was "I shall fight no more forever."

All of these journeys had some vision attached to them. There were some goals and priorities that were outcome based. They had something in mind when they set out on their trip. They had an outcome that they were trying to achieve.

Do we know our customers and do we know what their real needs and priorities are? What do our customers want? After all, we are here to serve our customers and they include those in the transportation business and those who want to travel. I was co-chairman of the National Quality Initiative which commissioned a survey of what people wanted with their transportation system. I was surprised that the number one priority was pavement condition. The second priority was safety; the third was uncongested traffic flow; the fourth was visual appeal; the fifth was adequate bridge conditions; the sixth was quick maintenance response time; and the very last was travel amenities. I am not sure that we are focusing our resources on these priorities.

In this same survey, the respondents were asked if additional money was to be spent on your priorities, how likely would you be to support an increase in taxes? Sixty-four percent said that they would pay a higher tax if it went to their priorities. I think this is a very important statement for all of us to think about.

We commissioned a needs study in Idaho, as I am sure many of you have done in your states, to determine our transportation dollar needs as it relates to highways. The highway system is a primary means of transportation in Idaho. We have basically one city that has public transportation, Boise, but less than one percent of the trips are made by public transportation, so we are pretty much automobile-based in this state. The needs study concluded that we had about \$4.1 billion worth of project backlog, and that given the rate of expenditure in the state, we would have about \$6 billion in needs by the year 2000. The legislature's first reaction was that is more money than we ever could expect to find. After all, Idaho only has 1.3 million people in the whole state. That is an awful lot of tax to ask them to pay. But they did, in fact, put together an interim committee to look at not only the needs statement that had been prepared by us, but to look at other options for the future. The most significant thing that we did in our Department and as a state was to work together with local governments to find some real common ground. We were able to take the information that we had gathered as part of our planning process, great amounts of data that all of you gather in your states and at the federal level. With this data, we were able to determine what would happen in ten years if we continued to spend at the levels we were spending. And what additional amounts would be needed if we wanted to achieve some positive change.

We looked at pavement condition, bridges, and congestion. These were the three areas where we had enough data to analyze historical trends, where we have been, how much we have been spending, where has it taken us as of 1995, what would happen over the next 10 years if we continued to spend at those levels, and at what levels would we have to spend to reverse that trend. I believe very strongly that had we not done this planning effort, we would have never been successful in getting a four cent fuel tax increase this last session. Now, bear in mind that brings Idaho's fuel tax to 25 cents a gallon. Twenty-five cents is higher than Washington State. It does get us up into the higher levels of fuel taxes in this nation in a very conservative state.

And so what I am suggesting to you is that as you begin to look at needs, you have to set priorities. You have to be able to talk in terms of outcomes. And you have to be able to make a commitment to those people who are going to pay that you are going to produce the outcome they expect. Now, that sounds real simple, doesn't it? But the fact is, most of us have said, give us more money and we will do more good things for you. That doesn't sell. At least, it doesn't sell in Idaho, and I don't believe it sells too well anywhere. You have to give people some expectation of what will be accomplished and

then you must deliver on these expectations. This is what we have done. Clearly, it took time and effort. We had 16 meetings around the state. We met with the citizenry a half a day at a time from Sand Point to Burley to Pocatello to Idaho Falls, to Nampa to Boise and here in Coeur d'Alene and in Lewiston and in Moscow—all over this state. The majority of people probably started out by saying we really don't want our taxes raised. But if you are going to raise our taxes, we would like you to improve the roadways that we travel on and if you are going to spend it on anything else, we are not going to be supportive. That message came across very loud. We have since made a commitment, not only within our Department, but to the legislature, that we will report back on an annual basis exactly what we did with that money and that we will spend it in those three areas that I just described. I believe we will deliver to the customers' satisfaction.

When I first arrived, transportation planning was a section within the Division of Highways. Today, we have a Division of Transportation Planning. This Division is multi-modal and stands within our organization as an equal partner, the brain and the limbs and the heart all working together. All of our division heads meet on a biweekly basis to talk about intermodal issues: how are our plans fitting together with aviation? how are they fitting public transportation? how are they fitting in our highway program? We also have a motor vehicles division. It is important that all of these groups work together and we believe that we are moving in that direction. We have hired transportation planners for each of our districts in order to assist us with public information.

We have worked hard to simplify and improve our STIP to make it a public document, something for the public that in a user-friendly way explains the issues. Our traditional STIP looked like a very good document to submit to the federal government, but it was a very difficult document for the public to understand. We have done a lot of work on that and I think we have come a long way in making the STIP a user-friendly public document.

We are actively working with local governments and regional planning organizations to identify and respond to their needs. This is critically important. We are working very hard to establish partnerships, not only partnerships within government but public-private partnerships. Prior to two years ago, the State of Idaho had never entered into a public-private partnership to accomplish a transportation goal. We currently have more than one going and we have one very significant one where we are sharing a \$10 million project, half with a private company and half with us. This is one of the very important threshold landmarks

that we in Idaho can now point to and say, this is not only working, but it is going to be something that we can use on a statewide basis, as a model. I am particularly pleased that in this public-private partnership we have been able to make our process more effective. For a major interchange near Boise, less than one year lapsed from the time that we signed the agreement on a public-private partnership to a construction contract. This included access approval from the FHWA at the Washington level, all the environmental documents, the design, the acquisition of right-of-way, all those things that normally take about three to five years. This could not have been accomplished without true partnerships where on a weekly basis all the partners came together, sat down, and discussed those things that had to be worked on.

We are experiencing the same kind of growth in Idaho as was mentioned in Washington State. How do we deal not with controlling growth, not managing growth, but rather accommodating growth with transportation? We need to be thinking about this and get out of this notion that we are going to control growth. Growth will occur because it is an economic decision and it is a good one. We need to accommodate that growth.

As we look at improving our planning and our public participation in the future, I think it is imperative that we set goals and that we are willing to articulate outcomes. We don't do a lot of that in transportation. We must articulate outcomes.

One aspect of transportation planning that is often missed is freight movement. As near as I can tell, we have no national freight policy although I know we are trying to put something together. We have no freight policy in Idaho. Do you have a freight policy in your state? I think it is very critical that as we look to the future, as we look at being international global traders, we must look beyond our borders and determine where our states fit into a much bigger logistics picture. The Port of Seattle is probably receiving a lot of freight destined eastward. Do we know about that? Are we dealing with it? Are we accommodating it? I think not. We need to do a lot more on freight. We focused on transporting people and cars. The closest we have come to accommodating freight is we design our pavement thickness based on truck usage. We need to really know more about freight so that we can do a better job of planning our facilities.

And, you know, as planners there is a legend in the Roman Empire. It is told that when an engineer of the Roman arch finished the job, he stood beneath it while the scaffolding was removed. It is a classic example of accountability. I really believe planners need to stand under that arch also, along with the engineers as a part of that accountability.

QUESTIONS

1. *Is it appropriate to look at all levels of government as you redefine decision making responsibilities within the reauthorization of ISTEA, and not just the federal level. That is, should state and local government responsibilities be subject to review, as well as MPOs.*

Rob Martinez: We have an excellent relationship with our MPOs. I think that the process that we have in Virginia works very well. I would argue, for example, that the mechanisms that we have used in Northern Virginia where we, in fact, work with a multi-state MPO is a good example of a process that works well. I am quite comfortable with the MPO role as it is currently defined under federal law, that in fact they do have a role to determine, in cooperation with the state, all of the projects that will be funded in the area of the MPO. However, I do disagree with the belief that there should be a direct state, regional, sub-regional or urban relationship established beyond the manner in which currently the MPO role is defined under federal law. I think that fundamentally would start working at cross purposes. First of all it ignores the constitutional role of the state; it would lead to a balkanization of transportation policy if the primary federal, state, and local nexus were not maintained as being between the federal and state government.

2. *What role for the planning group in the Virginia DOT do you see for negotiating project funding that comes from many different sources? Is that going to be done outside of the planning group? Will this be done by a financial group? and if it is, what input should or does the planning group have in that type of project-level financial negotiations?*

Rob Martinez: Frankly, in Virginia, we have a major public-private transportation piece of legislation which was engaged in 1995 by our state legislature and it is still very embryonic in its stage of development. Therefore, I can't give you a straight answer because we are still working through it. Any responsible public entity of Virginia, not only the state DOT, can be the sponsoring entity for a transportation project. So, a city or a town can be the local decision maker negotiating with the private sector or it can be a state entity. We have a process where the review is done in a committee consisting of the Deputy Secretary of Virginia DOT, the chief engineer, the chief financial person for the Department, outside legal and financial consultants and the like. We have to figure out a way of planning for these projects and fitting them within the plan.

I think that one way the private sector is avoiding unnecessary political uncertainty is to pick projects that we are working on in our state plan, and in fact, projects where the Commonwealth's Transportation Board has given its approval. Our statute requires that a project be consistent with the state plan. It also requires public support so the proposal cannot demonstrate local opposition to the project.

3. *Has the level of cynicism found in Washington State changed during the ISTEA era and to what degree has bringing people into the process raised or lowered the level of cynicism?*

Sid Morrison: The cynicism has been generated by a host of things. I have tried for some time now to separate transportation from other services provided by government. I like to start discussions with public groups who are often opposed to government action by saying that transportation is a logical function of government. In other words, if we are reinventing government, let's start at the fundamental level of why do we need government? Many governments started because of the need for a road or some other service in a community.

If ISTEA contributed anything to this cynicism, it is that people probably are seeing less in response to some of the federal taxes they pay. By seeing less, in our state we talk about peanut buttering. We don't have enough money to really build a project the people want, so we go through our selection process and pick a number of little things so they see a number of little things. If that contributes to cynicism, yes, we are part of the general government negative attitude. I think talk show hosts contribute much more to it than ISTEA, so my response is just to say that we have to do better. We have to be able to demonstrate our efficiency and if we can do that through better plans, worked out with more people in advance including local units of government, then we are making progress.

In all of the public outreach forums I have attended, WaDOT is playing a very low key role. In fact, I have not said one word. I have listened because those forums are designed to get local elected officials and their planners to provide, along with local citizens, their list of the projects they want to have built, what are the things they want to see. Our problem is that these lists often do not match our regional plans, therefore, we have to work with these officials to see what can be done.

4. *Are you enthused about the increasing role of the private sector in financing transportation infrastructure?*

Sid Morrison: My enthusiasm has increased because I don't see any other way we are going to pay for some major activities that have to happen as far as transportation infrastructure is concerned. My enthusiasm also continues because the proposals we have received for private financing were projects that needed to be carried out, bridges that needed to be modified and so forth, but which we had not been done. Even though it was a unanimous vote in the legislature to have us pursue the concept of users' fees, no one had bridged this huge philosophical gap in our state between a gas tax that has always paid for everything and the concept of toll roads or toll bridges. If you have not heard of our successes, we are moving ahead into the next phase on 22 park and ride lot additions, building second levels, built by private enterprise, with dry cleaners and banks and child care centers and security.

The legislature also decided that maybe there had to be a little bit of public money involved in this initiative, and for the Tacoma Narrows Bridge which is a major bottleneck for us and about a \$600 million investment in total, they provided \$10 million. The environmental impact statement, paid for with public money but being done by the private proposer, allows one to talk about the specifics of design and what the solutions will cost. Then the people in the affected area will be able to vote on the preferred alternative. It is a long, tough way to get there, but it may be the way to finally build a project that we can't finance. We may end up falling back to what we did a number of years ago, and that is building a toll road with public money and charging the same tolls, but perhaps taking more years to do it than private enterprise.

Rob Martinez: It is almost irrelevant whether we are enthused or not. It is here and we need to deal with it. This is a competitive marketplace which is increasingly sophisticated for private capital that is willing to invest in major infrastructure projects. It is not a national, but a global market, and so we are competing for available capital, not only against Washington State but also against Argentina, Spain and Italy. As far as Virginia is concerned, we looked very carefully at what had been the experience of other states. The state we scrutinized the most was Washington. We looked very carefully at the Washington experience. I think it is very exciting. The project Sid just referenced is, in many ways, one of the most intriguing that they pursued because it was so innovative, so different from the way we would have done it if it was just a public sector project. I think we need to have structures in place that allow the private sector to come in and define what projects should look like. We did put in the requirement in Virginia that local support had to be demonstrated. I cannot but be enthused about a

process that in Virginia has offered over half a billion dollars worth of new construction activity which otherwise would not have been available for these major projects.

5. *What specifically did Idaho DOT do to turn the STIP into a user-friendly document?*

Dwight Bower: I would say primarily we turned what we used to think of in terms of program funding areas into easy-to-understand concepts. The improvements that are going to be made in geographical areas related to the maps that we provided. Color coding was used to show where improvements would be made. We did not divide up the program by where the money was coming from, but rather where are the projects going to go? how do they fit together? and when are they planned to be done? This goes a long ways from what we used to have. We used to talk in public meetings about the Interstate mix of funds. We would talk about NHS funding. We never did bring it all together into one document that said here is what you can read as an individual customer and see what we are going to do for the railroads, what we are going to do for the bike paths, what we are going to do for aviation, and what we are going to do for roads regardless of what the funding source is. This begins to make it much more usable not only the public, but the legislature found it much easier to understand

6. *What is the role of the federal, state, local, public and private sectors in a freight policy, both domestic as well as international?*

Dwight Bower: First, no one state has a clue of what is going on nationally and internationally in freight. You basically take what shows up and try to deal with it. So I think at the federal level, the responsibility is to look at the overall national and international freight demands and how can we project those freight demands in the future. It doesn't have to be by road or by specific rail line, but knowing more about what is going to happen in the future at the national level is important.

One of the things we have talked about and a lot of the freight data we get is based on tonnage. We look at what are the relationships between pipeline, rail and highway, and what can we do between these as we begin to talk about the level playing field between rail and truck. We don't know what the level playing field is; we don't really know what it is we are hauling by truck, what we are hauling by rail, what is going by plane. We have a port in Idaho, believe it or not, at Lewiston, 400+ miles inland. A lot of freight goes out of Lewiston down the Columbia River. How does all of that fit into the

international picture? From a national level, we need to know that. But in the state, how are we going to use this information? What are our internal policies going to be?

When I talk to the U.S. Customs, I find out that 15 years ago, 4,000 trucks a year were heading across the border into Idaho from Canada; last year there were 40,000. This year there are going to be 60,000. How do I know that? I have to go talk to Customs. I would like to know those kind of things and I think the Federal Government could help.

Sid Morrison: I hope that the NHS, now that it is in place, will become a foundation for freight planning. The federal role would be to take a look at how we are expediting NHS projects throughout the country. We would selfishly start with a request to look at border crossings. Perhaps there should be special funding that states could work from to move these goods into the United States. I think there is a significant role for the federal government. We probably have included a lot of work for a lot of people with freight mobility in our statewide plan, especially if you talk about partnerships. By the way, our ports are now hit with what are called the post-panamax carriers. These are carriers that are hauling more of the intermodal units than you can possibly squeeze through the Panama Canal so there are 6,500 or more of these trailers. This is a line of trucks 30 miles long and so we are doing a whole lot of coordinated planning on what the impact of such a demand will be on the port access.

Rob Martinez: I just wanted to add that for freight policy, competitive market pricing is the key and in that regard it is incumbent on each of the states to incorporate freight concerns into their own policy. For example, in Virginia, we have moved in the past year and a half to do a major grade separation at the Port of Hampton Roads so that trains can load right at the port, instead of using trucks to move the containers to the loading location. At the federal level, it is inappropriate to choose winners. For example, the Alameda Corridor was funded off the top of a funding program. Well, I have my own little Alameda Corridor right down in Hampton Roads and obviously by the federal government choosing to invest in one port, they are lowering the amount of available funding for all the rest of us.

How stark the competitive marketplace that we are in today is demonstrated by the fact that as production in Asia moves farther south and west and you get new manufacturing production sites west and south of Hong Kong, the sailing distance to the West Coast of the United States from Hong Kong eastward is the same as from Hong Kong westward to the East Coast of the United States. So as production moves in Asia, we in Hampton

Roads are increasingly in competition with the Port of Seattle and with Long Beach/LA, and with everybody else on the West Coast. And with regard to Panamax, we are in this as well. We must address the same issues. So, it is very competitive and we each have to look internally at what we need to do.

Just one other point. We are so dependent on the private sector in the freight arena, that it is incumbent upon states to look at what is it you are doing to the private sector's ability to meet customer needs. As a matter of fact, it was the 103rd Congress, not the 104th, that deregulated intrastate trucking. Interstate trucking, of course, had been deregulated years ago. Intrastate trucking was deregulated by the 103rd Congress. What did we do? We looked at our statutes in Virginia internally and found that we still had a lot of regulation on our trucking inside Virginia. We basically deregulated trucking internally in Virginia. And then this past year, we looked at the railroad industry because we were so excited by what we had achieved in the trucking side and we ended up eliminating over 100 pages of Virginia Code that inhibited the ability of our railroads to do business. I think really each one of us should be looking at how to unleash the private markets and provide more customer service.

7. *How do you currently make decisions in a true multi-modal context, that is, investment decisions where the modes are competing among themselves for investment? What would you like to see with regard to information and data to help you make these decisions in the future?*

Sid Morrison: We make those decisions very carefully. I am afraid that we are making most of them these days based on the color of money. We have an amendment to our constitution which restricts state fuel taxes to highways and byways. The ferry system is part of the highway system. However, we are getting increasingly interested in intercity rail and commuter rail. The problem is I don't know whether I can really give you an answer because we are still influenced by the source of money. That is why when we go on the ISTEA reauthorization voyage, we would like to keep as much flexibility as possible in what we do at the federal level, and let us figure out how best to invest the money to get the best bargain for the customers and our taxpayers.

Dwight Bower: We are not too much different from Washington State. Constitutionally, all fuel tax revenues must go to highways, so it doesn't leave you a whole lot of opportunity to talk about other modes. We have so many opportunities and flexibility is really important, but on the other hand, it should begin with prioritization and working within your customers and people within your

state. It is absolutely imperative that everyone should communicate their priorities because under the flexibility of ISTEA there is an expectation that we will do everything. Now, I have no problem with the state

dealing with flexibility, but it is incumbent on us to then come back to the public, providing STIPs, looking at prioritization, making commitments and talking about outcomes. The responsibility lies with us.

SESSION #2: ISTEA: EXPERIENCES AND REAUTHORIZATION ISSUES

This session explored some of the issues that have evolved from the ISTEA planning requirements and identified key issues that should be addressed in ISTEA reauthorization.

GLORIA J. JEFF, FEDERAL HIGHWAY ADMINISTRATION

Let me begin by saying that from a planning perspective, ISTEA has been successful. There have been many concerns raised about aspects of the ISTEA legislation that deal with the planning process, but let me say unequivocally that it has been a success. Our focus has been changed from simply solving highway or transit problems to identifying *transportation solutions*. We are looking for opportunities to utilize not just modal comparisons, but a package of modal interactions against another package of modal interactions in order to come up with a solution that solves the problem of how we move people and goods in a particular corridor. Clearly, we have not perfected this approach; we still lack some of the tools that we need. One of the principal objectives of ISTEA was to get us to stop thinking modally and to start thinking intermodally, and that has been achieved.

We have more players involved in the decision making process. We have not just increased the number of folks, but we have begun to involve the folks who have some real impacts in the decision making process. This includes not only John Q Citizen (who we all keep searching for and never quite find), but also the freight community and local decision makers at the elective level including city mayors. There is a wonderful story about when the new mayor of St. Louis found out that he was chair of the metropolitan planning organization, his reaction as mayor was he didn't have time to be bothered with such a thing. He had a conversation with a member of the USDOT who explained to him what the duties and responsibilities of a metropolitan planning organization were and the mayor realized that it really was about making a difference, not only in his city but in his region; that it was critical to become involved. He has been an active participant ever since.

Rural communities now find themselves becoming more interested and involved in transportation planning. States can no longer give perfunctory attention to rural issues, but must actively engage rural interests in the decision making process about what projects will be included in their statewide transportation improvement program, as well as what kinds of activities they would

like to see in the long range transportation plan. Real partnerships have been formed as a result of moving and expanding the number of players involved in the decision making process, yet another success of ISTEA.

I think one of the unsung successes of ISTEA is that it has expanded the 3-C planning process established in the 1960s to explicitly involve the statewide processes so that we are now looking at an expansion of a fundamental planning tenet in transportation to the statewide level. And I believe the requirement for fiscally constrained plans has greatly improved the quality of plans.

Have we accomplished all that we needed to or wanted to under ISTEA? Absolutely not. We must begin to look at the opportunities for improvement based upon the strong foundation provided by ISTEA. The FHWA does not have a fixed position on reauthorization at this time, but instead has developed five fundamental principles which will guide our policy direction especially as they relate to requirements for statewide planning.

The first principle relates to **economic prosperity**. Transportation in and of itself is not an end; it is a means of accomplishing social, economic and environmental objectives. In the area of economic activity, transportation is critical to get a skilled work force to a particular work location. And for all of the dialogue about tax structures and business friendliness, the bottom line is if they don't have a way to get their raw materials and the work force to their employment site and the finished products out, it doesn't matter how tax friendly you are to the business community. They are not going to locate or remain there. Transportation is essential to the economic viability of any state.

Improving **quality of life** is our second principle. When one looks at transportation from a statewide perspective, this perspective must not only include metropolitan areas, but also issues relating to rural areas as well. Transportation goes directly to the economic well-being of folks as well as their ability to take advantage of not just work-related activities, but also non-work related activities in defining their quality of life. When we look at reauthorization, this needs to be an essential element.

Safety, our third principle, is by far one of the most important areas in transportation. We think that statewide plans and project-level decisions should be viewed from how safe, efficient and responsive to the customer needs the proposed action can be.

Our fourth principle has to do with **enhancing the environment**. The reality is that for many states, the quality of their environment drives their economic well

being and prosperity. For states where tourism is in the top three most significant industries, the ability to protect that environment provides future opportunities to attract the tourists and tourist dollars. Enhancing the environment is not just the right thing to do, it is the economically correct thing to do.

The final principle relates to the whole issue of ensuring **national security**. There is little question that an efficient transportation system is a critical element of our national defense. The Gulf War certainly illustrated this point.

Where do we go with respect to reauthorization? I think that some of the things we need to do in building on the successes of ISTEA are the following. We need to refine the definition of the role of government, of various publics, and of private industry. The roles for private industry include not only providing dollars, but also participating in planning by making data available. We need information on where goods movement is going to occur and what corridors are going to define the flow of goods activity. These are things that we can get from the private sector as they talk about their logistics decision making trees; as they talk about where they see their overseas partners beginning to move. And we can talk about the improvements that we make in particular transportation facilities to encourage it. The reality is that as time of travel and final destination become more critical, the availability of efficient transportation facilities for those engaged in international competition becomes critical.

One of the areas where we as a profession need to improve is maintaining a balance between professional judgment (for which we are all trained and equipped to do) and dealing with users' needs, wants, and desires. While a professional judgment may identify a series of activities that must occur to gain public support and the needed resources to make that happen, we are also going to have to deal with what those customers' needs, wants and desires are. These customer desires are articulated in economic, cultural and environmental terms. Transportation professionals must balance a focus on asphalt, concrete, steel, vehicles and facilities with a focus on economic, social and environmental objectives. Transportation is about jobs, jobs, jobs and it is about improving the quality of life; it is about communities becoming what they hope to be in the future; it is ultimately about people, their lives, their land, and what's important to them. If we don't recognize that there is a need for balance as we look to reauthorization and beyond, we will find ourselves unsupported because we were not satisfying our customers' needs, wants and desires. To respond to customers we will focus on new technologies, new functions, and new uses of our problem-

solving skills. How do we utilize advanced technologies to bring about transportation system objectives and on transportation networks? How do we utilize intelligent transportation systems, automatic vehicle locating systems, improved operations at ports and rail crossings to better protect the public? How do we solve problems with people and for people?

How do we make better use of the investments that we have? One thing our profession has never lacked is the ability to do is to spend money. No one in the past 30 to 40 years can say that we have lacked the ability to spend the highway monies in ways that the public could see. What we now must do is convince the public that these past investments and the investments we wish to make in the future represent sound economic decisions; we must have outcomes that people desire.

What I would like to do now is to pose a series of questions that I think are critical in trying to define statewide transportation planning for reauthorization and beyond. What is the balance in planning responsibilities between the states and the metropolitan planning organizations? Within AASHTO's own Standing Committee on Planning, we have done surveys that have indicated that one of the major weaknesses within the metropolitan planning organization was the skill level of the staffs to take on the new responsibilities that have been thrust upon it by ISTEA. What is the role of the state in helping the MPOs to resolve this deficiency? Is there a need to further refine, expand, or more sharply focus the relationship between the states and the metropolitan planning organizations? What is the relationship between the states and the large metropolitan areas within them? Is there a role for the sharing of responsibilities in performing metropolitan planning tasks?

What needs to be done to better define the issues associated with rural areas? How do the states define themselves in the context of the national transportation network and their contribution to the efficient and effective operation of that national network? Is this role limited to the national highway system? Or does it go beyond that? Is it only limited to the Interstate? What are the roles of statewide planning in answering these questions?

What is the role of the states in defining the U.S. global competitive position? What is the role of statewide planning in helping to make decisions that are nationally or internationally significant? How do you take a project like a mini-Alameda corridor and find a justification for why you should make that investment at the national level, rather than leave it up to the locals to decide that in the context of their local decision making process, it is important to them as opposed to some other local investment? What if the project has real impact on

national competitive position in the domestic or international marketplace, but no significant or tangible local benefits?. What is the role of statewide planning or the federal government in helping define this? Is statewide planning where funding sources decide what happens? Is it a combination of the color of money plus priorities, or is it based on doing the right thing from a planning perspective.

There are a host of other issues and questions having to do with safety, the environment, and the role of statewide planning in defining priorities for projects that support national security, and for that matter, in defining the role for the state with respect to supporting its economic base. The challenge to statewide transportation planners in this dialogue is to think outside our traditional boxes, even the boxes that have been expanded under ISTEA. We should think of the challenges that will face our communities over the next several decades and put in place a planning process that will prepare us for these challenges.

RICHARD MUDGE, APOGEE RESEARCH CORPORATION

ISTEA is a very interesting and complicated piece of legislation, especially if you link it to the Clean Air Act Amendments. I think one of the truly complicating factors with ISTEA is that the mandates and the regulations that came from the Clean Air Act Amendments and the regulations that came from ISTEA both burst on the scene at the same time. This perhaps is the reason why many feel the planning requirements in ISTEA are too burdensome. We really have only been doing ISTEA planning for four years. A great deal of learning has occurred. If we were involved in a rational process, we probably would spend a little more time developing experience, making some minor changes here and there, and not necessarily making radical changes to the ISTEA requirements. Unfortunately, ISTEA will be reauthorized next year. And it is very hard to tell what will come out of that.

It might be useful to step back a little and think about what should influence the ultimate policy on transportation planning. A certain amount of rationality should be desired in the planning process. There is interest in actually solving transportation problems. Having said this, let me move on because the current political mood in the country might overwhelm this seeming desire for rational planning. Part of it also reflects broader societal forces. Let me talk about three such forces that I think will affect maybe not the details of ISTEA, but will affect

how the next ISTEA is implemented and how the state DOTs go about doing their own statewide planning.

The first, of course, is money. ISTEA promised a lot of things. It provided some financial flexibility by opening up transportation funds to areas that had not been eligible for funding in the past. In a sense, it promised a lot of constituents that the massive highway trust fund would be available for all these wonderful things. Of course, in reality, it did not add any real money. If you adjust for inflation, and if you adjust for all the other things that are promised in ISTEA, no new money was provided. Where we are right now is in some ways even worse. If you watch what is going on in the Presidential debates, we are in kind of a "balance the budget" death dance right now. Over the last year or so, both political parties have been over-promising how much they can cut. Transportation is obviously in the middle of this. I think one of the most amazing things is to watch the debate over how fast we can cut the 4.3 cents. It is sort of a bizarre effort to do whatever you can to cut, rather than think whether there is a rational way to spend resources that will return even greater benefits.

Some of this happens at the state level as well. Traditionally, if you look at the last 10 or 20 years, the federal government has not been able to raise motor fuel taxes for some time, but the states have. They are closer to the problem. State DOTs in general have been able to raise their motor fuel taxes. However, over the last couple of years, we have seen the smallest number of state motor fuel tax increases within the last 10 or 20 years. What this says is that the traditional ways in which we fund transportation appear to be drying up. I think this is a profound change. It may come back again in ten years. I hope so because if you look back over the last 20 years, we have barely been able to maintain the value of our capital asset stock.

The second major trend is that transportation is not alone. Again, if you look at the federal budget, everybody talks about non-defense discretionary spending which is basically all the programs that have been built up over the last 20 or 30 years. Transportation is part of that, as is housing; there is a whole slew of these programs. These are the things that are easy to cut. It is tough to cut Social Security or other entitlements. Many governmental programs have been drying up, so despite the fact that transportation funding has been flat, we have reached a fairly ironic stage where transportation may be the only public tool that is out there that can actually shape local economies. It is one of the few things we can control and spend in one place versus another, make different types of investments that will shape how we live, where we work, stimulate the economy, and improve our daily lives. It is one of the few positive tools left that government actually

has. I find it also interesting that this unique role for transportation is coming at a time when our level of technical understanding of how transportation shapes the economy is greatly improving. We may not be better looking, but we are getting smarter.

The third major change I see is a new attitude of government toward mandates, toward appropriate governments. An example of this is the NHS bill where the management systems were made optional. The FHWA has focussed on innovative financing over the past several years where the philosophy has been promoting the utmost flexibility in using non-traditional sources of funding. This is a very different attitude from what has occurred in decades past. It is something we should try to take advantage of. It encourages experimentation, and it allows making some mistakes. It tries to look at the spirit and not the letter of the law, something which occurs not just at the federal level, but at all levels of government. There is a new interest in looking at how we get things done.

Let me present very quickly what I think are the major implications of these trends for statewide transportation planning. First, I believe it is important to integrate planning with finance. We live in a world where it is going to be tough to raise money. Current transportation planning is supposed to be fiscally constrained which means it is more about what we can't do rather than what we can do. We have seen a lot more interest in everything from public-private partnerships to innovative finance, state infrastructure banks, soft loans, credit enhancements, a whole bunch of things, terms and tools that really were not available and not tried before. Many of these have implications for what we plan and how we plan. They are interesting in that they can focus money on specific projects. Most of these financial tools are interesting because they are linked to good economics. You have to have projects that generate benefits in order to use any of these innovative finance tools. They are particularly valuable for intermodal and ITS types of projects. I think it is crucial to begin to integrate these techniques into the planning process. It is one of the few places we as transportation professionals can change the level of spending without having to go hat in hand to one of our political leaders.

Second, I think it is important to be a little more aggressive about our transportation planning. We have gone through an era when the Interstate was built, when we were more concerned about the cost of transportation. I think now we have enough knowledge to be concerned about the benefits that transportation provides, the role that transportation can provide in shaping the economy and the nature of our society. What this means is having long range plans that are more value-oriented; that

emphasize benefits and value added. These, in turn, will lead to ways in which we can finance transportation. In a sense it means making the state plans more of a political document. So, in a sense there is some risk there as well, but the bottom line is that it requires a different emphasis.

Third, we should always be taking advantage of the changing attitude in government to be more flexible and helpful. If there are regulations you are unhappy with, change them. What has happened in innovative finance is astounding. It is time to apply the openness, the changing regulations, and the changing rules to more than things that have dollar signs attached to them.

Finally, and this comes back to the general political concern and skepticism about public programs, the reason it is hard to get tax increases through and the main reason for federal program cuts, is the issue of accountability. Transportation has an advantage over almost all other public programs in the sense that it is easier to see the benefits. You can actually see transportation improvements. You can track the benefits. You can track how things have improved. At the same time, we have not been aggressive enough in terms of linking performance measures or accountability measures with our transportation plans. If we can attach a scorecard, then it helps to become a political document. Again, it is something that can help generate public as well as political support.

NANCY WILLIS, SURFACE TRANSPORTATION POLICY PROJECT (STPP)

Let me state STPP's overall position on reauthorization. We feel that ISTEA provides an excellent framework to start the reauthorization process. The reauthorization process should stick to the core values embodied in ISTEA. Many of these values have been mentioned by earlier speakers, although there are several others that I would like to emphasize. First and foremost is the partnership concept. This entails federal, state, local, metropolitan, and rural areas. This focus needs to be continued and strengthened. No level of government can meet the goals of ISTEA individually. The partnership depends on interdependency between each level; each has a role to play.

Another key principle within ISTEA is funding flexibility which provides opportunities to develop the most appropriate transportation system in the nation. We strongly believe in a strong role for local governments and a strong role for the metropolitan planning organizations in determining the priorities for transportation investment in their jurisdiction. Such determination should not already be made by artificial program category definitions.

We need to have a system for tracing the federal \$24 billion that we spend each year on transportation, and we support increasing the accuracy of information on the system condition's performance and management of our transportation system. Toward that end, STPP will be producing a document which highlights where the money goes. Everybody has been talking about the impact of funding. STPP's response is to track where the money went. In addition, we believe it is important to highlight ISTEA success stories which show how funding flexibility can produce innovative and effective results. We believe that such success stories will be useful to Congress, the administration, and citizen activists around the country who are anxious to find out how other people in similar situations have solved problems that are similar to the ones they are facing.

Our next principle is based on the concept that good projects come from good planning. Good planning links investments to goals such as accessibility, economic growth, the environment and land use. STPP is strongly committed to the notion that transportation investments must be used to increase and promote social equity. STPP would really like your help in keeping these principles at the forefront during the next reauthorization of ISTEA.

In 1991, ISTEA included some major advantages and advances in national transportation policy. We all have to recognize that change is not easy for any human being or institution. It takes time for states and individuals to adjust to new ways of doing things. STPP strongly feels that the transportation field needs time to absorb the procedures that are instituted by ISTEA. We do not think it is practical, nor does it make sense to start making major changes right now. With regard to the ISTEA-mandated planning factors, ISTEA's major failure was that it created more processes up front and new regulations were layered on top of the old regulations. All this focus on process is really not what STPP had in mind when we were crafting our positions, but this is the situation we have and are living with. We should try to improve it.

We strongly support the Enhancement Program. The Enhancement Program allows citizen groups to be creative and suggest relatively small projects that enhance the transportation experience. A major reason why STPP supports this Program so strongly is that it brought a lot of supporters to the transportation planning process. For a relatively small amount of funding, we gained a lot of allies from neighborhood groups, historic preservationists, bicyclists, pedestrians, shop owners, and small businesses, etc. Of course, we could debate the amount of the set aside for Enhancements and how to improve the Program, however, I believe that many transportation supporters would agree that the overall concept is one that is worthwhile.

ISTEA simplified the federal funding programs, but it certainly did not simplify the system of design review or project approval. Nor did it simplify the regulatory process that the states and MPOs had to go through to get projects going. I know we have at least two goals for reauthorization in addition to not throwing out the baby with the bath water. We want to move the federal government away from reviewing projects and setting standards. We want to move towards a policy oversight without sacrificing the environment. We also want to facilitate state and local governments and MPOs working together to meet local needs and to respect the relationship with national goals. STPP really wants to communicate and to work with you all on finding out where your problems have been in the statewide planning process and to work with you on information sharing.

NEIL J. PEDERSEN, MARYLAND STATE HIGHWAY ADMINISTRATION

Given that the previous speaker discussed the enhancements programs, I can't resist the opportunity to offer my own perspective which I am sure many of my colleagues will disagree with. I think the enhancement program is one of the best things that happened in ISTEA. It finally gave us the opportunity as transportation professionals, who often are viewed as wearing the black hat, of being able to give back something just as we expect corporate America to give back something to society; And importantly, giving back things that really are very important and valued by the community. I for one hope that it will continue to be part of reauthorization. I know this is not a commonly shared feeling on the part of many of my colleagues from the state DOTs.

I have been asked to provide a perspective on statewide transportation planning that reflects local government attitudes. Of course, I am a state DOT official. But in thinking about my talk, Maryland is smaller than several of the largest MPOs in the country, either in terms of population or geographic area. Maryland has two metropolitan areas whose population constitutes 80 percent of the state and 90 percent of our population lives within our MPO areas. So, perhaps I am able to provide somewhat of a "local" perspective. Maryland has a multimodal planning and programming process that has now been in place for 20 years and that is founded on a partnership with local governments. We certainly feel we have been practicing many of the principles of ISTEA for the better part of those 20 years, particularly the partnership aspects.

Let me start by saying that I believe, for the most part, the spirit and intent of the fundamental policy direction that ISTEA tried to achieve in the area of statewide planning was correct and we should not throw the baby out with the bath water. That having been said, however, the execution has probably left something to be desired. ISTEA's intent that statewide multimodal planning occur in a truly participative manner, that information systems be developed that would help informed decision making take place, that a level playing field be established with flexibility to shift financial resources to where needs are greatest, that capital programming and planning take into account financial realities and that statewide transportation planning take place in a broader context that recognizes many factors other than just transportation-based decision criteria were all fundamental principles that should serve as the cornerstone for NEXTEA's approach to statewide planning. However, if we start from the premise that we should build upon ISTEA's intent and learn from the lessons of trying to implement ISTEA, there are a number of changes that I would like to see reflected in NEXTEA's approach to statewide planning requirements. And unlike the previous speakers who probably were talking at a broader, loftier principle level, many of the issues that I will deal with perhaps come from a practitioner and more practical level.

The first is the role of the federal government. I do feel that there is a legitimate role for the federal government in establishing broad policies regarding issues of national interest, and we certainly do have a number of issues of national interest. However, the federal government should then leave it to state and local governments to implement these policies in a way that works best within each state. As I previously cited, there were a number of important policy changes that ISTEA mandated, the intent of which I personally agree with. Unfortunately, both ISTEA and particularly its subsequent regulations went far beyond saying that good, informed, participative multimodal planning must take place and instead tried to prescribe uniform requirements regarding how planning should take place throughout the nation. I have to acknowledge that the job the regulators had was not an easy one because ISTEA was pretty prescriptive in some areas in telling the regulators what they had to do in terms of telling us how we had to do our job.

An example of this, from my perspective, was the ill-fated management system requirements. I think most people would agree, and most state DOT planning directors would agree, management systems that provide sound data used in decision making are a good idea. In fact, AASHTO's Standing Committee on Planning

recently did a survey of state DOTs that revealed that despite making the management systems optional, a vast majority of the states are proceeding forward with implementation of most of the management systems called for in ISTEA. However, rather than having to develop these systems in accordance with prescriptive federal requirements, the states now can be developing these systems to really meet their business needs. In Maryland, we are taking a different approach on several of the systems than we would have under the interim regulations that came out regarding management systems.

So I would argue that the first and foremost reauthorization issue related to statewide planning is the degree to which the federal government will prescribe how statewide planning will take place.

I believe that ISTEA recognizes that transportation is a service that enables other broader and more important goals in peoples' lives to be achieved. As has been said before, transportation is not an end in and of itself. Although transportation decisions should be made in the context of broader societal goals, we should also be careful not to assign transportation primary responsibility for trying to solve some of these other broad based problems, but instead recognize that transportation is just one part of trying to solve those broader problems. One of these broader issues that we have been dealing with in several of our major investment studies recently, is the issue of suburbanization and urban sprawl and its relationship to freeway construction. Clearly, freeways have played a role in such urbanization patterns, but there are many other societal factors that are taking place that really are causing a number of the shifts that are occurring. So, I would say that ISTEA should require multimodal statewide planning to take place within a broader societal context, but needed transportation improvements cannot be held hostage because other societal sectors are not achieving broader goals desired by Congress.

One of the most important results of ISTEA was the forging of many new partnerships, and the inclusion of many in the transportation planning process who had not previously been involved. From my personal perspective, I think it is one of the most important and significant changes that has happened as a result of ISTEA. The basic tenet of involvement by all interested parties in transportation planning must be an essential element in ISTEA's planning requirements as far as I am concerned. However, sometimes grassroots organizations are disconnected with where their elected officials are coming from. We have certainly had that experience within Maryland. In many of the discussions regarding partnerships that I have been engaged in, rarely is the role of state legislators mentioned. And for those of us who deal with statewide multimodal planning on a daily basis,

state legislators are our primary policy and decision makers. I think we need to remember in the discussions that are taking place regarding NEXTEA the key role of state legislators in transportation policy making.

ISTEA and the subsequent regulations to a certain extent gave preeminence to MPO planning and programming in metropolitan areas. The interpretation by some has been that state plans and programs within metropolitan areas must conform to the metropolitan plans and programs. I would take exception to that view. I really believe that statewide and metropolitan planning must operate in partnership and that they really need to have co-equal status in metropolitan areas. I suspect that sometimes we all, MPOs in particular, do take a parochial view of issues. But we have experienced in Maryland that there needs to be a forging of a partnership between the planners who must by the very nature of their jobs take a broader statewide view, and the planners within the local MPO areas who take a more focused local view. Decisions must be based on a partnership between a statewide planning perspective and a local planning perspective.

One of the most important changes resulting from ISTEA was the requirement to develop financially constrained plans and programs. No longer could transportation improvement programs be compiled as wish lists. Instead, real decisions regarding priorities and funding sources for transportation had to be made. I come from a state where we have been required for 20 years to be developing multimodal transportation capital programs in which revenues and the projects that are listed within our capital program are in balance. I also come from a state where we have a number of local jurisdictions who have six year capital programs that, to put it bluntly, are works of fiction. However, I think there needs to be a little more flexibility. We need to have the ability to have some limited over-programming. Project schedules, believe it or not, are not always met, and sometimes we do have project slippage. There ought to be a recognition of this as being a reality and that we should have projects ready without having to go through lengthy TIP amendment processes. We should be able to move projects up easily or substitute projects that are ready as a result of project slippage. Contingent program approval should be permitted based on revenues that may be achieved during the program period but are uncertain at the time of program approval.

Now, let me get to a topic where I really have major substantive problems with ISTEA and that is the financial constraint requirements of 20-year long range plans at the metropolitan level. I would go so far as to say that I think that the primary effect of the financial constraint requirements on long range plans has been to prevent visionary planning from occurring. Our experience in

Maryland has been that in order for us to be able to raise revenues or identify funding sources for major capital projects, we must do planning and project development without necessarily knowing where the funding is going to come. Such efforts are critically important for us to build the support that is necessary when we ultimately get the funding. This becomes even more the case as we explore innovative and alternative sources of funding for our projects. I am going to use a case example that is near and dear to my heart. Some of you have heard about the US 301 major investment study we have undertaken. We just recently had the vote of our task force that has been guiding that study and one of the conclusions they reached was that from a long range planning perspective, we need to be planning for a light rail line that would extend out from the Washington area into the corridor. They recognize that it is not something that is going to be built in the near term, and that we don't have the funding availability for it now, but we need to be doing enough planning to be able to identify an alignment for corridor preservation. We need to be doing land use planning that is concentrating development around future potential light rail stations so that we can be building up the ridership that can economically support light rail in the future. But the financial constraint requirements for the long range plan for the Washington metropolitan area will not show that light rail line as part of the long range plan for the Washington area.

I feel so strongly about this point that I think I would go so far as to say that if ISTEA's financial constraint requirements had been in place for the last 30 years, most of the nation's new rail starts could not have occurred. Or if they did, they would have occurred as a result of working around the planning requirements through the political process rather than their occurring as a result of good, long range planning. I guess the bottom line from my perspective is financial constraint is important; we need to be considering it; but it ought to be one factor among many that are being considered as opposed to an absolute requirement in terms of development of long range plans.

While still on the topic of capital programming, when the requirement came out for development of statewide transportation improvement programs, the reaction of many state DOTs was to prepare separate documents to meet federal requirements that dotted all the "i's" and crossed all the "t's." Another thing I would like to see in the next ISTEA is more flexibility in terms of recognizing that if capital programs developed on a statewide level basically meet the spirit and intent, but not necessarily all of the specific requirements of the federal government, this is sufficient in terms of meeting the requirements for a capital program.

There are two issues that are somewhat interrelated, system preservation and management systems. The United States has invested hundreds of billions of dollars in a transportation infrastructure that is second to none in the world. The transportation infrastructure is one of the keys to our economic competitiveness. We need to recognize that our transportation infrastructure is aging and requires major investment and system preservation. The next ISTEA must recognize system preservation as being the number one priority, and that sufficient funding should be provided for system preservation before money is made available for system expansion. I would include in system preservation the broader issue of management of our system as well, including things like ITS. So, I would like to see in the next ISTEA a stated policy that the first call on funding will be for preserving and managing the existing system and then translate that into appropriate requirements and incentives.

This is where I see the management systems coming in place. The concept of management systems and the idea of decisions being made based upon information is one that I wholeheartedly support. What I don't support, and what AASHTO has certainly come out very clearly saying and what the NHS legislation recognized, is that we should not be told to develop these management systems. Instead, management systems need to be developed that meet the business needs of our organizations. There ought to be a requirement from my perspective that management systems be developed that provide sufficient information that can be used to determine what our system preservation needs are so that we know we are adequately funding system preservation.

Another area I feel pretty strongly about is the area of corridor preservation. In my opinion, USDOT rules are stacked against effective corridor preservation. We need to have an acknowledgment within the next ISTEA and the flexibility to do corridor preservation without having to go all that way through the NEPA process. We need to have, as the result of identification of corridors through the long range planning process and perhaps through the major investment study investment process, the ability to do effective corridor preservation like the US 301 light rail line that I used as an example.

The final area I would like to talk about is the area of performance management requirements. Quite frankly, I think some of us still don't really know where USDOT is coming from in this area, but we have a lot of fears. I don't think that many of us would argue with the principle that we ought to be measuring what we are doing in terms of achieving our policy goals. But there are very different policy priorities and goals across the country among different states within the country. What is important in the plains of North Dakota is quite

different than what is important in downtown Baltimore. And trying to develop performance measures that are going to be applied and then have states compared to these performance measures will cause a real negative reaction. What we ought to be doing instead is to embrace the concept of performance management and performance measurement, but recognizing that there are going to be very different policy goals that we are trying to measure at a state level and let performance measures be established at the state and metropolitan level.

DISCUSSION ON FINANCIALLY CONSTRAINED TRANSPORTATION PLANS

Gloria Jeff: In terms of the need for financial constraint, I think such a constraint has been helpful because we have gotten away from the fiction of promises that could not be kept. It was easier to say "yes" than take the hard position of setting priorities. One goes back to the pre-ISTEA era and the initial intention of transportation improvement programs. TIPs were intended to establish priorities among projects. We all know that at least beyond the annual element in many cases the listed projects were what we hoped to do, but didn't necessarily reflect what was going to be eventually in the next annual element. What has happened under ISTEA is that programming should reflect resource limitations so that we can get what we can deliver with respect to the transportation system and determine priorities. In looking at the long range planning component, the intent was to take a look at what could be accomplished. It helped assess what and how revenues would be available. ISTEA caused us to evaluate what it was we were proposing, and if it was a high priority and if existing financial resources did not exist, what to do. It was not our option to conclude that the plan couldn't be implemented. Instead, ISTEA gave us an opportunity in the event there is no money to find solutions which delivered the outcomes desired.

State DOT Representative: I don't have any problem with anything you have said and quite frankly I wouldn't bother with the issue of the financial constraints. I understood the linkage with the Clean Air Act. But I am also starting to see the effect that Neil is talking about that if the financial constraints are very dismal, you do affect your ability to raise money because you are unable to show what you are accomplishing. In addition, the environmental community comes in and through the process is successful at making these constraints very tight. So, it is difficult to have a plan that serves as a vision document, the positive statement of the future that allows the public to support our activities.

State DOT Representative: One of the biggest criticisms we have received in our planning is that we are totally unrealistic. We could not have carried out in our state a purely needs-based planning approach. We do needs-based planning and we list the needs. There is nothing in ISTEA that says you can't do that. But our long range plan has to be financially constrained with some type of realistic goal, not necessarily to available revenues because if we do that,

we would not have any vision at all. But there must be some type of target out there that allows us to say this is doable. We can use that as an incentive for additional revenue, but it doesn't turn people off because it is so far out of reach. So, I believe in financial constraints. I think ISTEA is fine the way it is. It doesn't prohibit us from doing what we have been doing.

SESSION #3: LINKAGE BETWEEN STATEWIDE PLANNING, PROGRAMMING, AND FINANCING

The purpose of this session was to reflect on the degree to which ISTEA's vision regarding the linkage between planning, programming and finance has occurred, and to discuss what issues have been raised during the intervening four and a half years.

MICHAEL D. MEYER, GEORGIA INSTITUTE OF TECHNOLOGY

Let me start by reading part of an editorial from one of the nation's leading newspapers. This particular metropolitan area was facing a water shortage which caused several local communities to begin water rationing. The newspaper published the following editorial. "If thousands of the county residents who lost water service last week would like something to blame for their predicament, the culprit is easy to find. Many of them drive it daily. Because the opening of state highways serving these communities have made the area more accessible, this county has grown so fast that water systems and other infrastructure has been unable to keep pace." In essence, the water problems in this country were being blamed on transportation investment decisions.

In such an environment, what role is there for planning? In an ideal world, we would like to think that all decisions relating to infrastructure investments will result from a rational and comprehensive consideration of all sorts of factors. In a constrained financial environment, the best projects will rise to the top of that particular list. It is the planning process that identifies the best projects regardless of modal considerations. The planning, programming and financial aspects of this list of best projects are integrally intertwined with one another, and that the "public good" is the driving force behind these decisions. Planning, as a process, promotes a better definition of what a public good is. Planning and system performance feedback provides accountability to the public on the impact and consequences of these particular decisions. Innovation—not just innovative financing—in all things that we do in transportation is embraced by both decision makers and by a technical staff that provides the planning information. And importantly, decision makers depend and rely on planning information. Now notice I said "ideally." In reality, that's not the way it is, although I do believe many states are now using some elements of this "ideal" process, e.g., looking very carefully at performance and feedback loops, trying to understand

what the public is looking for, and what the public good is.

One of the complications in any discussion of statewide transportation planning is that, if you look at the state plans that were submitted as part of ISTEA, there were many different types of plans. Some plans were nothing more than policy statements or policy plans; others were very specific in the actions that had to be required in order to implement a particular plan. Others identified the corridors of statewide significance in their particular state and looked at investments in these particular corridors. Others were more or less a traditional needs study while others were true systems plans. Still others were not only systems plans, but also included lists of projects that were to be implemented in that particular state.

It is thus difficult to generalize about the linkage between planning, programming, and finance, simply because plans are structured in very different ways. However, I would argue, taking a fairly traditional perspective, that there are very strong linkages between the plan and what precedes it, the programming document that comes at the end, and eventually the projects that are implemented. These linkages start very early with the vision for that particular state, and the vision for the transportation system in terms of meeting the state's goals and objectives. The different alternatives and scenarios that are analyzed as part of the planning process, the analysis and evaluation itself, financial issues, and financial analyses all look at the different implications of possible system outcomes. This all leads to the programming document, guided by the open process where many stakeholders, users, and constituencies are involved. This is a very traditional perspective of the linkage between planning, programming, and financing.

The STIP is the document that will give a sense of where the investment priorities are going to be. It is a very important management tool. It helps determine projects and focus implementation efforts, and establishes the project linkages between what comes out of the planning process and goes into programming. However, if you look at how projects are actually selected in many states—not in all states, but in many states—projects are selected with little connection to what the planning process said or came up with. I certainly experienced this in my state DOT activities, and I'm sure all of you do too. Although we have a planning process that rationally leads to a TIP or STIP, which then rationally leads into the project

development process, which then rationally goes through the environmental analysis, and eventually implemented, in many ways, the programming decisions are influenced by many different factors outside of this process.

My thesis is that system performance and program performance—two different concepts—are clearly important. Program performance relates to how money is being used, and to being held accountable for such expenditures. Such accountability is found in all sorts of fields—education, crime, health—and will likely be found in transportation even more in the future. An example of such an approach is found in the State of Washington where system performance measurements are integrally tied to not only the policy plan and the system plan, but also directly to the program and the budget. Indicators or measurements are provided of how well the DOT is doing, and the impacts, benefits, and consequences of this investment. Another example comes from the State of Florida. Florida's state transportation plan is an excellent document. Again, what you see in that document is the concept of goals, objectives, and performance measures. How are we going to measure whether we are achieving these particular goals in our state transportation plan? What Florida does in their document is indicate the important objectives, and the benchmarks they are looking for in terms of they should be doing. This is not a systems performance perspective of level of service, but rather how much have we actually programmed on the Florida interstate highway system over the years that we are looking at? Five private sector proposals were received for innovative financing, what dates were they certified as projects? How effective are we in responding to such opportunities? This is what I think we are going to see more of over the next several years.

Other examples of accountability in statewide transportation planning come from Minnesota, New Jersey, Washington State, and Texas. Minnesota DOT has gone through a very extensive process to identify performance measures for their state transportation program. They have divided their goal to optimize investment in the transportation system into three major areas, i.e., the actual performance of the system; how that investment relates to public values and issues; and then how it relates to organizational performance and values as well. Interestingly, customer satisfaction is a very important element determining how successful MinnDOT is. Surveys are used to gauge this satisfaction. New Jersey DOT uses selective performance measures for what they call their report card on the performance of their transportation system. Washington State adopted so-called multimodal system performance measures. Interestingly, Washington DOT divided the system performance measures into a state-owned component (those things over

which they have direct control over investment), and a state-interest component which I interpret as meaning that the DOT has an interest from a policy perspective and from a total systems perspective, but the DOT that doesn't have direct control over the investment associated with those types of facilities. This broad perspective is quite unique as it relates to performance measures. The Texas DOT focusses its plan on a goal-oriented program of achievement where an important distinction is made between outcomes and output. Outputs related to such things as number of projects, vehicle lane-miles constructed, physical measures of organizational production. However, the outcome is ultimately what happens once the outputs are put in place. These could be defined in broad terms of environmental quality, quality of life, economic productivity, et cetera or perhaps in even more narrower terms.

It seems to me that a very broad definition of transportation in terms of what it is trying to achieve leads one to a broadened definition of what finance really means. This then leads to a much broader definition of those who actually benefit from particular projects. This is the crux of the whole issue associated with where innovative financing fits into the context of statewide planning. Wisconsin has developed a very interesting combination of financing packages associated with implementing the plan and program. The financial analysis of this combination included some very important questions such as, how stable will the gas tax revenues be over the lifetime of the plan? What will be the impact of new technologies on the ability of financing particular elements of this system? What are options for new revenue sources?

One of the critical issues related to developing reasonable financing strategies is to coordinate statewide planning and finance issues with that which occurs in MPOs. The Oregon DOT has developed an approach adopted in their state transportation plan which states that ODOT will coordinate, cooperate, and integrate state plans with metropolitan plans. Importantly, the ODOT will define the criteria for the adoption of MPO plans within the context of statewide goals relating to quality of life initiatives and growth management issues.

Let me end by providing a concept of where I see statewide planning heading. I am convinced that we will be seeing more of what I call performance-based planning. System performance as well as system condition is a growing concern around the country. However, system performance needs to be measured with close ties to what I call the fundamental roles of transportation, i.e., accessibility and mobility. Travel time in essence is a bottom line performance measure. These performance measures should be closely tied to the project evaluation

process in the form of compatible evaluation criteria. Improved means of collecting data and data management are going to be critical to making this performance-based planning process feasible. Up to this point in time, data availability was a critical issue and still is today. However, advancements in data collection technology will provide more cost effective ways to feed data into performance-based planning.

What does this all mean in terms of the statewide planning process and the role that it should play? Very simply, it is going to be the major mechanism for establishing accountability of the decision making process and what leads up to it, and it is going to be system performance focused. There will likely be project prioritization categories where certain type of projects receive priority because of their likely impact on outcomes (e.g., preservation projects, enhancements, air quality). In an era of scarce resources, I firmly believe that planning will guide funding allocation. If nothing else, the plan provides a convenient excuse to say "no". Importantly, the planning process and the inherent feedback loops provide critical monitoring of system performance. I was a supporter, and still am a supporter, of the management systems. I strongly believe they, or something like them, will be inherent to planning in the coming decades.

Let me end by reading a couple of lines from the editorial with which I began my talk. The editorial goes on to say that the federal government has laws to do regional planning for transportation. The editorial concludes, "The DOT does none of these things. At best, it goes through the motions needed to create the illusion of abiding by federal regulations, then it blithely does what it always intended to do. That approach is no longer acceptable. Its consequences on (and here we go in terms of outcomes) quality of life, economic development, and the environment are simply too profound. The DOT must be brought kicking and dragging into a meaningful transportation planning process in which it is one of several players, rather than the dictator that lays the paving and forces everyone else to deal with the consequence."

I see this happening more and more around the country, as people start questioning not necessarily what is going on with the roads, but what is happening because of the roads. This is our challenge for the future.

YSELA LLORT, FLORIDA DEPARTMENT OF TRANSPORTATION

It is my pleasure to talk to you about the Florida planning process; a process that has taken us years to put in place. We call it "planning-mentation." This is a phrase that we

have coined ourselves, because we see planning as being just the first part of implementation. I would like to cover three topics in my presentation—some background about Florida, some information on the Florida DOT, and then a discussion on some of the benefits and frankly some of the disbenefits of a process such as the one we have adopted.

Florida is the fourth most populous state in the country with 14 million people. More interestingly, we have about 40 million visitors per year. Some of these visitors spend a lot of time in Florida; half of these arrive by air, half arrive by land. Our economy is very much dependent on these visitors. As a matter of fact, about 17 percent of the gross state product is tourism, an additional 16 percent is international trade. Both of these factors together lead very to much an awareness of the importance of the transportation system.

The Florida DOT has about 10,000 employees with an annual budget of \$3 billion. This year for the first time we are going to have a letting of just over \$1 billion, which is twice what we had five years ago. So, as you can see, we have grown tremendously in terms of our program capability. We are a decentralized agency, where the central office is responsible for program policy. The actual programming in Florida is done in the eight districts. District personnel have the authority to make all operational decisions within the DOT. The central office focus is on policy, policy determination in cooperation with the districts, and quality assurance to make sure that the policies are carried out vis-a-vis procedures.

Our planning process is quite intricate. The late 1980's were real tough years for the Florida DOT. Thinking we were going to get a tax increase that never happened, we over-committed to the tune of almost \$850 million. When this happens, the subsequent assessment of "what happened?" provides some unique opportunities for restructuring, because you are certainly not hampered by anyone arguing that the current process works. The other thing that happens when you have a financial crash is that you lose the support of the legislature, thus requiring substantial efforts to regain credibility. Our problems were very much in the public eye which meant that many folks were wondering about the approach that FDOT was taking to safeguard public dollars. We know the importance of maintaining public credibility. The other thing that happened during this period was a restructuring of the Florida Transportation Commission. The Commission is a lay body whose unique function is to measure the performance of the agency. Initially, this meant measuring program performance, but it is now moving more to working with us on measuring system performance as well.

We know the importance of maintaining a planning-mentation process that is very open, so that people know we are listening to their expression of priorities, that we are measuring outcomes, and that we are measuring performance. Frankly, our survival depends on it. Our planning- mentation process is very cyclical. It is a process that is also defined by state statutes, so it is institutionalized within the Florida DOT and within the State's comprehensive planning structure. The first part of the institutionalization of this process arose with our finance and the programming responsibilities. More and more, the planning element caught up to it. Since 1985, Florida has been a growth management state which means that all local governments have comprehensive plans. We have a state land use agency. The transportation program is viewed as being supportive of the land use plan and an important part of the growth management strategies for the state.

We talked yesterday about transportation not being self-serving. In Florida, by statute it is not self-serving. We have a five-year capital improvement program that we call the work program. By law, the first three years of the work program stand as what we call a commitment to growth management, which means that any deviation from the first three years of the work program need to be accounted for in a very rigorous and open manner. This leads to a lot of stability in the program from the perspective that changes only occur for good reasons. Any time the legislature wants to depart from our programming document, the amount of the money that would support the new project cannot be earmarked off the top, it must come out of the construction district for that region. This is a very interesting policy, because it has really kept to a minimum those projects earmarked from other sources. It is very hard for a state legislator to earmark a project when it is known back in the district that other projects might not now occur.

Another characteristic of our process is that we are a policy-driven organization. We are guided by data analysis, although our policies in terms of growth management provide an overall context for actions. We have policies in terms of the number of lanes that we will provide for conventional traffic. These things lead to very intricate performance measures.

We also have sunshine laws in Florida which call for an open decision making process. In many ways, we were ahead of ISTEA in terms of public involvement. We simply cannot make decisions unless they are very public. Public involvement happens early and often. It occurs throughout the process. We have not perfected the public involvement role, but it has been institutionalized in all of our processes.

We are also lucky in that we have 25 MPOs with a dozen of these being transportation management areas (TMAs). We also have a superstructure of MPOs called the MPO Advisory Committee which helps guide the development of the Florida Transportation Plan and some of our other important processes. The Florida Transportation Plan lays out the goals, long- and short-range objectives, and the department strategy for meeting these goals. Objectives are benchmarked in the short-range component with this benchmarking focussing on outcomes. For example, one of our goals is providing an interconnected statewide system. One of the long range objectives in this goal category was to develop high speed rail in Florida. If you take that one step further down in our short range component of our plan, we have a short range objective that specifically says that by 2006, we will begin high speed rail service between Tampa, Miami, and Orlando. Then we have strategies on how we would do that. This culminates in an actual allocation in our program and resource plan that says we will allocate \$70 million per year. So the linkage between the planning and programming is there.

We have been working on developing a performance measurement system for our intrastate highway system, so that we can move away from measuring success in terms of dollar commitment, and instead we can measure success in terms of increased mobility.

The next part of our process is a program and resource plan which is our financial document. This starts off with the goals and long-range objectives, and the 25-year funding forecast that relates to the state's transportation plan and to our short-range objectives. The resource plan then distributes dollars to program area, and later to the districts. It is prepared annually and covers 10 years with a particular emphasis on the new fifth year of our work program. Remember, the first three years are stable, so we really don't focus on those. We look at these as historical data and focus on the new fifth year. This plan is developed from management systems data. The bridge and pavement management systems are very highly developed in Florida, as is our maintenance system that we use for allocations in the resource plan. In addition, we have modal plans for each of our modes that also lay out strategies. These modal plans are like a second layer of detailed information that serve as input into the resource plan.

The third part of our process is our work program. Work program development is an annual comprehensive process done at the district level. We spend a lot of time developing work program instructions which lay out (building on our program and resource plan) the targets, desired outcomes, and priorities by programs. The actual programming occurs at the district in cooperation with the

MPOs. We have a monthly meeting chaired by the Secretary where we monitor the targets that are laid out in our work program by district and by program.

A final performance monitoring occurs when the Florida Transportation Commission undertakes a review of our agency. It looks at every aspect of our performance, especially if we met our work program targets. This review is done on a quarterly review cycle, and then on an annual review cycle. The results of this review are of keen interest to the media and to the legislature, because frankly they want to know that the people of Florida are getting what we told them we would produce. The review is very program performance-oriented, but the Commission is likely to become more interested in including system performance data.

One of the major advantages of the approach I just described is that it is reliable. The people of Florida know what it is that we are promising in terms of transportation delivery. It is an open process that has a lot of stakeholder involvement, and it is credible. It does take some of the politics away from the process simply because it is fairly rigorous and data driven, and because it is participatory with a lot of evaluation of the whole delivery system. However, there are some disadvantages. It is a very complex process. Anytime you have a new elected official or for that matter the citizenry at large, a lot of effort is needed to make sure they can understand this process; so they know how decisions are made. It is also fairly inflexible in the first years. If you are a local elected official, you want to influence project delivery in your community. This process, because it is policy and program driven, does not allow such changes to be made easily.

We are still learning how to make our process work better. However, we have come a long way and are quite comfortable that we are heading in the right direction.

**KENNETH LEONARD, WISCONSIN
DEPARTMENT OF TRANSPORTATION**

I would like to describe in fairly general terms our current thinking on how to integrate planning, programming, and financing. In particular, this description will reflect what we are proposing for our new state highway plan, what we are calling "the next generation state highway plan." The plan is really more than a plan, it is really an investment management process. We are just starting now, so a lot of what I'm going to tell you is what we are planning to do in the near future.

Our last state highway plan was done in 1984. We updated certain corridors in 1988, and then in 1995 we did a statewide multimodal plan which we named Translinks

21. The 1984 plan identified system deficiencies which were driven at the time by best engineering practices. It concentrated mainly on the rural elements, as opposed to urban elements which were handled more by our MPOs. There was no bridge element, and there was little attention given to financial constraints. In 1988, we undertook our Corridors 20/20 effort. Again, this addressed mainly rural capacity needs. We looked at our major population economic centers in the state, and how to better link them. This was done mainly with a corridor focus. The plan really did not deal with pavement condition, safety, and bridge issues, but rather more with congestion. A backbone system of multiple lane highways would tie the state together. Connectors linked regions with communities of 5,000 or more people. When ISTEA required a national highway system, the 20/20 program became the backbone of our NHS. Most of the plan is now implemented. In our opinion, this was a very effective effort.

In 1995, we developed what we call Translinks which was a more policy-oriented plan that dealt with both rural and urban areas. We included an update of Corridors 20/20, but also looked at other factors like the environment, land use, and economic development. Translinks explicitly looked at future financial needs, discussed how to meet these needs, and identified different financing options.

Let me now turn to the future. Whereas our traditional approach has the plan leading to the program and then to financing, we have now reached a certain level of maturation where programming affects the plan, and financing obviously affects what is in the plan. Financial constraints now affect what goes in the plan. To some extent this thinking of an investment management process has caused us to reorganize. In the past, we had a division of planning and a division of highways that included the programming element. Instead of these two divisions, we now have a transportation investment management division. Within that we have planning and state highway programming. Both of these elements are now found in one division. Our transportation infrastructure development division includes what used to be highway engineering and operations, transit, rail and aeronautics. Then we have a division of districts which includes those people in the field who are the eyes and the ears of the department.

The goals for our state highway plan were that it provide a long term vision, that it be long-range in terms of policy, that it provide a management framework to identify highway needs, that it be undertaken at a systems level, that it estimate long-range improvement costs, and that it be the basic input into our programming process and STIP. This plan would be the way to communicate

the reasoning behind our highway budget proposals. It would also be the yardstick for evaluating the long term performance of the state highway plan.

The key elements in developing this new highway plan are to involve top management, involve technical experts and the districts who know what is going on in the field, provide an integrated plan and program, be performance-based (we are going to have various standards and alternatives), and be financially constrained. We will be trying to keep the plan visionary, and have an unconstrained financing scenario along with financially constrained alternatives too. What happens when we have a financially constrained alternative, and what is the impact on system performance measures? What happens to the pavement and the bridges and safety and so on? We will also be integrating our efforts with those that occur in MPOs. We want the MPOs to participate as part of the steering committee in developing the highway program. We are going to integrate the modeling process at the MPO level and the state level. Translinks 21 will provide the multimodal context for carrying this out.

There are really three main parts to this process of investment management—the management structure, the tools to produce the ingredients of the plan, and the process. At the management structure level, we will have an advisory committee. This will include the typical groups representing economic development interests, chambers of commerce, environmental groups, different modal groups, and different levels of government. A steering committee, which is made up of the heads of planning, programming, budget, various highway engineering folks, our districts, and internal technical experts, will guide this activity internally. This isn't just a group of management people. This group includes technical experts which I think is very important. The MPOs are going to be on this steering committee, as will the Federal Highway Administration. We have topical committees which focus on more technical issues and which look at various elements that go into the plan, providing us with standards for pavement, bridge, congestion, safety, and so on. In addition, we will have committees that examine policy issues dealing with economic development and the environment. We will have a special committee on highway and rail grade crossings which has become very important lately.

The core of our analytical process is modeling. We are in the process of developing our modeling approach. Our inventory and condition data will be input into the inner workings of the model. The same model will be used for both the plan and the program. The plan will provide the long term vision, strategies, and what the resource needs are. The program will include the actual projects and what the schedule is. Both of those will be

influenced by the financing, which will include the short range financing, or in our case a biennial budget, and long term financing. We'll have trade-off analysis among these three areas, e.g., if we only have so much money, what is going to be the impact on the plan and on the program? In the past, we looked more at the financial impact on the program, not so much what the impact was on the plan. We hope to really integrate all three.

The process will include project development and ultimately the performance of these projects. Feedback into the beginning of the process is a critical element of the overall approach. We are looking at performance within planning, programming, and financing, but also in terms of what gets built or programmatic performance. Policy issues will be considered strongly in this process. What is our policy on corridor preservation, access control, jurisdictional issues, funding, urban mobility needs, as well as many more?

Our target plan completion date is July, 1998. I think we can reach this goal. Our previous planning efforts, e.g., Translinks 21, provide a strong foundation for our proposed planning effort. In particular, we have evolved into planning that is undertaken in a multimodal context, so we believe we are well along in using a planning process that reflects the needs of our state.

QUESTIONS

1. *What oversight does Florida DOT Headquarters have over resource allocation in the Districts? In addition, how does Florida DOT make sure that projects of statewide significance receive their fair share of resources?*

Ysela Llort: The only program that gets separate money is the Interstate highway system. Apart from that, all the other programs are managed by the districts. Oversight stems from a collective decision process laid out by program and by districts. The monitoring process we have for accountability then allows us to see what progress we are making. Actual implementation decisions are done at the district level, in cooperation with the local government. We have what we call a priority highway system in Florida, and this is the Florida intrastate highway system. That system contains all the Interstates, the limited access facilities within the state, the Florida Turnpike, and some other key arteries. This system is viewed as ensuring statewide mobility. We have made it quite clear in the transportation plan, and we have concurrence from the MPOs, that Florida DOT will place priority on it in terms of increasing system performance. Our process is very clear on where the priorities are and how these priorities will be financed.

2. *How do you handle the divergent quality in the crisp, clear, good, high quality data about program output, and the miserable, subjective, and sometimes made up data about outcomes? Like safety for example, if you can report back to the legislature that when they gave you \$100 million, you fixed 214 substandard bridges, this is output. If in the same year the drinking age was changed and there were no hurricanes, you might have a significant change in safety statistics which could be construed as an outcome. Should we still fight for outcomes rather than programmatic output?*

Michael Meyer: The answer to your question is yes. I would argue for political reasons, for public accountability reasons, for good planning reasons to think very carefully about what are the logical outcome measurements of your transportation investment. I certainly do not underestimate the difficulty in doing so. Using your example of bridges, I think reporting the number of bridges fixed is an important productivity measure that I am sure the legislature would be interested in. However, taking the next step of saying what the economic impact was on that region of the state would also be important to convey to the public and elected officials what these improvements actually mean. The basis for my comments is that throughout my professional life, I have been an observer and a participant in transportation, especially in the political context within which transportation operates. I think it is incumbent upon the transportation community to think very carefully about the impact of investments instead of just saying we fixed 300 bridges last year. Resources are limited, and we are competing with a lot of other societal needs. We definitely have to have a better sense of what we are talking about with regard to the outcomes of investment. I go back to Ysela's comments about system performance. I can't help but think that in a state like Florida which is experiencing such high levels of growth, that any system performance measures can be so overwhelmed by growth and other factors, that some sense of what you are truly accomplishing will be lost to your constituencies. So, that is why I recommended serious consideration to outcome measures.

Ysela Llort: It is much easier for our legislators and elected officials to relate to outputs than outcomes, because they are easier to measure. We can report on how many miles of Florida Interstate highways we build. It is harder for us to relate what impact this investment had in increasing mobility, accessibility, or whatever other measures we want in terms of outcomes. We have been very successful informing people on output. So there is a real reluctance to go to outcomes. It is a moral dilemma, because we are supposed to the talk about outcomes.

Kenneth Leonard: My feeling is that in terms of the technical analysis that precedes decision making, it is very important to have some sense of likely outcomes which can be represented in system monitoring efforts as performance measures. In the end, elected officials make decisions based on their own reality systems, which may not rely on data at all. We have to provide the data, but the extent to which they are used is often outside our control.

3. *To what extent is (or should be) planning, programming and finance integrated organizationally within one division or unit?*

Michael Meyer: I am no longer in a DOT position, but when I was, I fought every day for five years to get control of the programming process. In my mind, an integrated approach to planning, programming, and finance means having an integrated organizational structure. One of the easiest ways of doing this is to have all three functions in one unit.

Kenneth Leonard: We now have planning and programming under one umbrella, and I think it works. However, I don't think programming necessarily has to be moved in with planning. Rather, there has to be communication, coordination, and interaction among the planning and programming staff.

Ysela Llort: We do have it integrated. From a policy perspective, it is integrated within the context of the state's transportation plan. At the district level, it is again integrated because the same unit has this responsibility.

SESSION #4: ANALYTICAL TOOLS/SYSTEMS MODELING

The purpose of this session was to examine the technical issues associated with statewide transportation planning, including models, data management, and the ties to decision making.

DAVID ROSE, DYE MANAGEMENT GROUP, INC.

The technical challenge in statewide transportation planning is bringing as much technical information to the policy decision making table as possible. If one accepts this point of departure, we then need to go through our technical methods and approaches and understand the questions that have to be addressed at that policy level, and make sure our tools can provide as much information as is needed. In my talk, I will briefly discuss the status of analysis in statewide planning, and then provide some examples of where analysis has been used quite successfully in statewide planning.

Statewide transportation planning is really a work in progress. There is a lot of change currently on-going throughout the country. In many cases, we are not delivering transportation systems, we are managing them. We are looking at the entire transportation system, not just the transportation networks that we own and operate at the state level. In essence, we're looking at the multimodal transportation system in its entirety. The question we are asking through statewide planning is what are the transportation system goals, needs, and priorities for all modes? More importantly, or equally important, what is the plan? What are we going to do about these needs? Answering this question requires technical analysis.

We have done a real good job over the last few years on the process side, especially in involving new participants. All states have defined their goals and strategies and actions to varying degrees. Not surprisingly, there are a lot of similarities among them. Even with these similarities, however, we see many different approaches designating the multimodal system, that is, identifying all those elements of the transportation system that we want to analyze for statewide purposes. To differing degrees multimodal analysis is going on. Some states are more sophisticated than others. In other states, the important question is defining what multimodalism means, particularly for some of the larger and more rural states.

Our analytical procedures systematically look at current and future operating conditions, whether it is travel demand, performance (such as level of service), and the current and future physical conditions of the system.

The plans I have been involved with have relied upon a good existing information base for bridge and pavements. Of course, the highway side of statewide planning is the area where we have the most sophisticated and greatest tradition in looking at needs. For other modes, we are asking very fundamental questions about what we mean by a "need". From a plan perspective, what is a "need" in a plan? Is it the sum of all the identified deficiencies for all modes? Personally, I think not. I like the way that the Dallas-Fort Worth MPO looks at "need." They define need as the action or project that will resolve a particular problem. The need thus becomes an understandable action with a cost attached to it through the analysis that takes place.

If they cannot afford a particular solution, then the needs change. They define a need that they can afford, or they do innovative financing to address the need.

Some of the success in statewide planning to date clearly arises when top-down involvement and understanding of the process occurs. In addition, in my opinion, some of the more successful efforts have been characterized by a statewide analysis, not simply adding up all the deficiencies of individual modal systems. Where policies and strategies drive the technical analysis, we find that the analysis looks at the key questions that are of concern to those making decisions.

One of the key issues with any technical analysis is the availability and use of data. Although many might disagree, I believe we have a lot of data out there. The problem is we do not have information. We are not using the data we have. If we use the data we have more creatively, we would have more information.

We also need to be more circumspect about the threats and weaknesses of our typical analysis approach. In terms of the plan itself, a real weakness is the lack of specificity in defining what is desired. We have goals and strategies. Every plan I have seen mentions environmental sensitivity, mobility, system preservation, balancing urban/rural needs, etc. We want to do all of these things, but I think we lack the specificity by which we can set priorities and then translate this into allocation decisions. So, I think one of the weaknesses is that our choices and priorities in planning are not always specific. We need to make them specific to tie them to action, so that when we speak to customers they can see how the policy goals and strategies will be helpful to them.

I have also found that we tend to speak to people who speak the same language, who know what planning is, and what we are trying to do. We have got a lot of

work to do to communicate what we are doing through the plan, and in making the tie between planning, programming, and the delivery of our solutions. This is one way of making sure our analysis focuses on supporting policy and management decision making.

A very valuable tool to this end is a needs analysis. However, we need to have a much better handle on needs by mode and also on what we mean when we talk about multimodal needs. This is particularly important when we bring this information to the table and talk intelligently about needs. We don't consistently measure needs, even within the same agency. I have seen cases where planners and programmers in the same agency measure needs differently. We need to be consistently measuring needs so that we are credible.

Some of the important evolutionary steps needed for our analytical procedures include the following. We must have a capability to test "what if" scenarios. This is particularly true at the statewide level where important policy-level questions need such capability. Typical questions include, if we make improvements in this corridor, what does it mean for other corridors? If we buy right-of-way, put in railroad tracks and lease them back, what does this mean for our highway corridor? Being able to do this type of analysis is going to be very important, and certainly we do not have that capability yet in many states. We are also hampered by a lack of what I refer to as an integrated data architecture for planning analysis. What I mean by that is having consistent data definitions and reference systems, and being able to get at this data from different organizational units. We also need analysis procedures for undertaking commodity flow analysis and freight analysis.

I would now like to discuss an example from Texas. We should be looking at how we can improve something that is already working and thinking ahead. This was the approach that Texas took. The Texas DOT finished its statewide plan in 1995. After completing the plan, DOT officials decided to take stock of what had happened and to see what had been learned by going through this process. What did they need to do on a continuing basis to support the analysis that in turn supported statewide planning? In so doing, they defined the most effective approach to planning that led to appropriate analysis and evaluation to support decision making at a statewide level. Texas did this in a very systematic way. For each step in the process they broke it down into a lot of detail, and identified the inputs and the outputs. They then asked how can we improve? What would be the ideal process? Then, for each of these processes, what are the analytical techniques and methods that we need to support these processes? What data do we need? What training is

needed at the staff level? Then how can we most effectively do this?

What is the current status of technical analysis that surfaced from this process? The statewide planning effort relied on existing data and information; kind of beg, borrow, and steal from existing information sources. However, Texas DOT identified priorities for enhancing the analysis procedures. These included using HERS when it becomes available, providing a closer tie to the pavement and bridge management systems, developing transit estimation procedures at the statewide level that can bring transit issues to the table with the same level of confidence that we can on the highway side, developing some forecasting procedures that will allow "what if" analyses and further refining origin and destination freight data.

Within the overall modeling approach, the very first step is to ask the question of what is the statewide system that we care about for analysis? Planners' first recommendation is to establish criteria and then apply the criteria to define the system. This approach was used in Montana's planning effort, but the criteria are probably very different from what most states use. As an example, freight rail stations of state interest include those shipping over 1,000 carloads inbound and outbound. In a state with a lot more activity, you might have a different threshold. The point I'm making is as you apply your criteria, you establish an inventory of a system. Now from the point of view of your ongoing analysis, you ask some very simple questions about what do we want to know about each element of the system? For a highway corridor, for example, we want to know about the pavement condition, operational conditions, traffic volume, vehicle classification, and so forth. We can systematically define what it is we want, and then we can look to our procedures to make sure they provide it. In many cases, for example in Montana, the pavement management system provides the pavement condition information.

In summary, our technical analysis needs to bring the right information to the policy table, and define the right level of analysis to support decision making. We must recognize that statewide analysis needs are very different. We should not define needs as the sum of all the deficiencies. The type of analysis that we need is answering questions such as what happens if I take \$50 million or \$60 million from the maintenance program and put it somewhere else? Or if at the statewide level we are going to include two or three interchanges that cost \$75 million apiece, what does that mean for how we can deliver pavement preservation? At that broad, programmatic level we need to be able to do some type of

“what if” analyses. We need to understand who is going to use the analysis.

We need to establish some priorities of where enhancements to our analysis capability should occur first. These priorities are important because one of the lessons I have learned in the last few years is that you can do a lot of new things with planning, but it takes a long while for it to be institutionalized on an ongoing basis. Change is always difficult. It is hard to absorb within an organization, so we need to establish our priorities, and then very systematically start to add enhance analysis capability. Finally, we need to make the business case for the analysis we do. By this I mean who is going to use the results of the analysis?, how will it be used? what is the benefit from this analysis?, and what is the cost? If we can make this case, we will be able to do the type of analysis that we want to do.

BRIAN ZIEGLER, WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

I am going to talk about the analytical tools we use in Washington State. It is critically important to understand, however, that you cannot separate the use of analytical tools from policy issues, policy makers, and political issues. You can be as technically proficient as you want to be, but if you do not have legislative or policy support, your plans and programs aren't going anywhere.

Let me describe quickly how we analyzed the highway system for our statewide planning process. Interestingly enough, when we did the highway system plan, we used linear growth rates in VMT and when compared to the results of urban land use-based forecast models, there was an amazing relationship. Washington is very fortunate. We are a growth management state. In the future we are going to have more accurate regional and urban models that are based on comprehensive plans that the state has mandated local governments to develop. We have this link with regional and local transportation plans that is somewhat unique in the country. So, another major tool in Washington for analyzing the future is looking back. We like to look at historical data to see what is happening in Washington. VMT, of course, is growing. It is going to take quite an effort to deviate from the linear growth rate that we are seeing, but we know it is never going to happen if we do not get at the land use decisions that clearly define it.

There is one important characteristic of our system that will critically affect transportation planning and decision making in Washington State. We have invested a lot of money in bridges in Washington. A typical bridge life is 75 years. Our fear is that as those bridges become

deficient—and they will become deficient in the next 15 to 25 years—we have a tremendous liability in front of us. It is not necessary that we be able to model this. Our bridge management system has recognized the trend. As long as we communicate this clearly to our policy makers, they will come forward with the necessary funding. However, it's not just bridges. Pavements are the same way. Most of the pavement in Washington was constructed between the sixties and eighties on the Interstate system. It is now coming to the end of its useful life. Of course we are spending tremendous amounts of money trying to find cost effective ways to repair all this pavement. The state-of-the-art in concrete rehabilitation is not where you would expect it to be today.

We do all of our planning in concert with local governments. We are very fortunate in our state to have a Growth Management Act that allows us to work closely with regional governments in setting local service standards, setting deficiency analysis processes, and agreeing to the appropriate solutions. We have 8 MPOs, 3 TMAs, and 14 Regional Transportation Planning Organizations (RTPOs). The RTPOs are state organizations funded from the Growth Management Act. They were established before ISTEA. An important feature of the RTPOs is their focus on intercounty coordination. Instead of dealing with 39 counties and 261 cities, the 14 RTPOs do all the local and regional coordination for the state. It has been a tremendous benefit.

Let me talk quickly about freight modeling. So far it has taken two forms—designating a system for freight movements, and undertaking an eastern Washington intermodal transportation study. We have gathered tremendous amounts of commodity flow data, origin-destination data, timing of harvests and shipments of fertilizers on the river, rail and highway networks of eastern Washington. We don't know what to do with most of the data. The next big step is to find out how useful that data will be.

What are we doing in system designation? It is interesting to note that when the federal government abolished system designations under ISTEA, it basically took the training wheels off of states and said, we are not going to program our monies according to primary, secondary, urban, and rural systems. Washington State and many other states jumped right back in and said, we need those training wheels back on, because they helped us define priorities. We defined the statewide system before the NHS came out. When the NHS requirement came out, we had the high priority, principal arterial network already defined in Washington. We had legislation that required us to designate such a system. We further divided it into a branch system and set objectives for that system.

Functional classification is still a big issue in Washington State in that we have tied many of our state funds to functional classification. We have gone so far as to have the only functionally classified freight system in the United States.

The freight and goods transportation system covers about 45,000 miles of state and local roadway. The interesting thing about it is that the state legislature said there wasn't a consistent freight policy or weight restriction policy on this system. So DOT designated a system and defined a weight restriction policy for the system. Our freight system sets a hierarchy based on tonnage. Each of our roads is identified as part of a "T" category (i.e., T1 through T5).

My final topic will be financial constraint. Washington State has had a legal requirement that local governments financially restrain their comprehensive and capital facilities plans. Given that the state's plans have to be consistent with the local plans, our highway system plan was financially constrained. The important thing about financial constraint is to distinguish where you want to apply it. We have done annual programs, biennial budgets, and even three-year STIPs that are financially constrained. We are just moving into the six-year financial constraint. We just finished a 20 year financially-constrained transportation plan. You don't use the same tool, the same analysis, the same procedures when you use these constraints. You make a completely different set of assumptions depending on the window or the time frame that you are dealing with. All that is important to you is to have the same level of accuracy in cost estimates as you do in your revenue forecasts.

One of the interesting things we did in Washington State was to seek indicators of willingness to pay for transportation. When looking 20 years into the future, we do not know if there will still be a gas tax. So, we looked at what people have been willing to pay over the last 30 years to see if there was some insight we could use in forecasting future revenues. In the face of tremendously increasing medical costs, tremendously decreasing food and tobacco costs, we found that transportation has been fairly constant. We looked at transportation costs at the individual level. We found that in Washington \$25 per \$1,000 personal income or 2.5 percent of personal income goes to some sort of transportation tax, whether state, federal, or local. It has been constant, that's the amazing thing. We looked at the last 15 years and it's still constant. The federal component of this percentage has been declining, but state and local taxes have picked up the slack.

We made the assumption that the \$25 per \$1,000 personal income was a pretty stable indication of

individuals' willingness to pay and thus used this in our financial analysis.

However, we would like to increase dollars instead of maintaining a stable level of dollars per thousand dollars of personal income. There is a big difference between what you can fund with existing revenue sources which is the projected bottom line, and what you can fund if the trend continues. If we follow the historical trend, we'll get about \$18 billion. To fully fund the plan, we need about \$26 billion. With \$9.9 billion, you can maintain, operate, and preserve, and maybe do a little environmental or economic work, and that's it. You don't do any safety. You don't do any mobility. With the historical trend in revenues, we can meet about 40 percent of the mobility needs that we have identified. That communicates a powerful message that we cannot satisfy everyone's desires. We're taking the fun out of planning, because we're starting to say no. We did the same type of analysis for the multimodal plan. The state ferries are doing a similar process to constrain their needs for the next 20 years. Public transportation agencies, counties, and cities are assuming that they will get their existing share of transportation revenues. For major new transportation initiatives in Washington, i.e., high speed freight and rail transportation and high capacity transit in urban areas, we'll have to work even harder than we did in the past to move above the historical trend to fund these new initiatives.

MARION R. POOLE, NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Our first statewide plan occurred in the late 1910's and we built the recommended facilities in the 1920s. The old highway commission did such a good job that the legislature gave us all the county highway system in 1932. We really got involved in urban planning in 1959, with general statutes that required each municipality in the state to develop a major street plan adequate to meet existing and future travel needs in the state. We got into 3C planning in the 1960s and multimodal planning in the early 1970s. As you can see, North Carolina has a long history of transportation planning.

Some of the topics I would like to cover are: organization, system inventories, needs inventories, monitoring of system performance, use of GIS, a phased environmental process, and statewide travel modeling.

Organizing for transportation planning and programming is a critical first step in effective statewide transportation planning. Program development, project planning/environmental analysis, and statewide/highway systems planning are three major elements under one

managerial unit within the Division of Highways. The Statewide Planning Branch has inherited statewide and urban systems planning (when I say urban systems planning, that means small urban planning, county planning, and regional planning), traffic surveys, GIS and inventories, traffic forecasts for projects, and research. Putting all of these activities under one umbrella has been beneficial. It placed under one management a lot of special interrelated functions. It has improved the efficiency of our traffic forecasts, and has improved working relationships and provided for shared financial resources. We share talent a lot more easily than we would have previously. We heavily use GIS. Some of the major problems that we are dealing with are multiple referencing systems, coordination with other databases within the department, and accuracy. We are planning for example, to start using GPS in locating accidents and traffic counts.

In the 1970s and 1980s, we developed a comprehensive inventory of urban needs based on many studies that we had underway. We probably have mutually approved plans in something in excess of over 200 local governments. So we have a lot of studies that have been done, redone, and looked at several times over the years. In the needs inventory system we have identified current needs, five-year needs, 15 year needs, needs that would be anticipated and handled by municipalities, needs the state would need to handle, and elements that would be constructed through the development process. Because we have a good needs inventory system, we were able to provide sufficient data to the legislature that allowed us to secure adequate funding for the transportation system. HPMS is helpful in identifying rural needs, although it has underestimated our urban needs. We have a good bridge analysis program that has provided us with good information on our bridge needs. When we were working on congestion management and intermodal management systems, we sent out questionnaires across the state to our urban areas, MPOs, small urban, and our division offices asking them to identify congested elements. What we got back was exactly what we already knew. Our needs inventory system had actually already defined it. We received no surprises from that survey.

Monitoring of system performance is an important element of our process. We have built on some work that our research unit did in the early 1990s in using HPMS as a means of measuring system performance. We would like to start developing an annual report for our legislature. We are currently working on improving the quality of our HPMS data. We are doing some field check sampling of our sample sections. Our traffic survey staff and MPOs have been trained to do HPMS inventory work. Our planning units and traffic forecast units check HPMS

travel forecasts. Because they were previously separate organizations, they developed straight line factors for putting projected traffic in the HPMS system. So now we have some oversight. Also, as we do transportation studies, the project forecasts are routinely sent to our GIS group to update HPMS data that is in the system.

We have been one of the nation's leaders in using GIS. We were traditionally strong in using GIS for base mapping and inventories of environmental data. In cooperation with both the USDOT and state environmental agencies, we developed extensive statewide GIS inventories and environmental data for transportation planning. Data currently maintained includes watersheds, known hazardous material sites, undisturbed habitats, wetlands from hydric soils, nonpoint discharge emission sources, schools, parks, churches, cemeteries, community facilities, et cetera. Such data have been used extensively in project planning for some time now. Currently we are using it at the Statewide Planning Branch as part of our urban and county transportation systems planning in environmental analysis of alternative plans. We still must resolve linear referencing problems. We want to link road, traffic, and needs inventories to GIS. We want to resolve some of the computer-aided drafting and design incompatibility with the GIS software. And we want to improve data transfer capabilities. As more and more of our staff start using it, the little pipeline this data is fed through is starting to be a problem. So data transfer is going to be a serious problem we have got to deal with.

Another analysis issue for us is the phased environmental process. We began what we call a corridor preservation pilot project in 1990. One of the principal objectives was to conduct sufficient environmental analysis at the systems planning level to enable the state to receive corridor approval for thoroughfare projects included in mutually adopted thoroughfare plans. We did this for two studies as a pilot effort. These studies are just now coming to conclusion. They have been very successful. We have preferred corridors that have been approved by NCDOT, resource agencies, local governments, and the Federal Highway Administration. In Asheville, we have two projects that have received approval for project planning as environmental assessment projects. One section of another project has proceeded as a categorical exclusion. On one project we know we saved at least \$150,000 that would have cost us in the project alternative corridors analysis. Some of the major observations of our experience is that resource agencies with varying comfort levels expressed support and saw merit in the phased environmental approach. The pilot projects increased the level of trust between the resource agencies and Department. We went to them before we had any

perceived notion on the project decision. That is, we had not made a decision to build a road.

It is real important to have everybody involved and committed to this kind of effort. Some of the recommendations that have come out of these projects include: we need to improve our coordination with resource agencies, the process needs to be streamlined as much as possible, be more careful in defining corridor widths (we used much narrower widths than what they normally use in project studies), and the issue of system environmental impact analysis versus projects must still be resolved. If you have the best system plan that may have one bad project from an environmental standpoint, will the resource agencies be willing to accept that as a good solution? The corridor decisions must last over a period of time; at least five to seven years or even longer. Also, we are looking at the possibility of a phased Section 404 permitting process with the Corps of Engineers.

We think there is going to be really substantial savings in cost and time. We are in the process of expanding this approach to other studies.

Let me finish by talking about statewide travel models. Our first effort at travel modeling was in 1966.

In 1990, when the state legislature defined our intrastate system, our engineers went back to the 1966 report and updated the statewide travel model using some of the ideas and concepts that came out of this report. As a result, we have a statewide travel model that does a pretty good job of estimating travel between cities, but breaks down when you get into urban areas. We want to do a better job at statewide travel modeling. We would like to look at improved passenger forecasting, goods and truck movements, transit and auto use, and total annual travel. We may develop a model that looks at total travel over the whole system. We want to model a larger number of trip purposes. We want to model differences in urban, suburban, and rural travel, especially given that recent surveys show clear differences in travel. State-level travel analysis will likely be done in the near future—we're thinking of using zip codes, a more extensive network, including rural major collector roads. We want to make it multimodal—highway, intercity rail, and air, because we are looking at high speed rail in one of the corridors in the state. Lastly, we want to make all of our analysis relate to the state's economy. We want to better understand why people travel.

SESSION #5: PLANNING FOR OPERATING STATEWIDE TRANSPORTATION SYSTEMS IN AN ERA OF SCARCE RESOURCES

The purpose of this session was to explore the relationship between operations planning and statewide planning and programming. This session illustrated such challenges with examples from different operations-oriented projects.

STEVEN SMITH, JHK & ASSOCS.

Let me begin by defining what I mean by operations and operations planning. Operations represent ongoing activities, the day-to-day things that keep passengers and freight moving efficiently and safely. For example, operations could range from toll facilities and the corresponding electronic toll collection to snow/ice removal, although this latter could be argued as being maintenance. Everytime a DOT undertakes a capital project, it assumes responsibilities for operating that facility in a safe and efficient manner. Incident management is certainly another operational responsibility that many DOTs have assumed. Even such things as static signing and road grade striping, actions that traffic engineers typically deal with, but probably don't strike us as an exciting part of operations, still satisfies the basic definition of operations.

As planners, we need to think about how the planning process can help operations occur in an efficient and cost effective manner. With the requirement to have financially constrained state and metropolitan transportation plans, we must think about trade offs like the cost of operations and maintenance (versus initial capital cost) which consumes a large portion of an agency's budget. Planning activities involve some element of operations. So it is not as if planners have never been involved in operations before, but the question is how do planners incorporate these issues into the planning process.

I would like to offer a few principles that should guide the linkage between planning and operations. First of all, operations should influence the choice of projects. When transportation plans and TIPs are being developed, we cannot neglect the cost and benefits of operations. Costs and benefits are more difficult to assess in some cases, such as intelligent transportation systems where we really have very little evidence of what these systems can do for us and what they provide. This also relates to agency image and credibility. For example, a DOT might decide not to get involved in the travel information business because of the need to operationally manage the dissemination of such information with a high degree of

credibility. One of the things we all realize when travel information systems are implemented is that they are often not as well managed as we would like them to be, or they do not give as much information as we would like them to give. When you boil it down to what it takes to develop, manage, and carry out a credible system, it takes a lot of attention. And so, operations becomes an important consideration in agency commitments to implement operations-oriented actions.

Inherent in a commitment to undertake such an action is having relevant staff capabilities. We have to ask ourselves whether our staff deal with these operational issues. Can they run the system?, do they have the expertise?

The second principle is that operability should be integrated into the design concept. Operations is often left as an afterthought. We are finding that when operations is considered in project decisions and design, we have a better project, perhaps a less costly project, and one that has ownership by both the planning and operations community. Just to give you an example, I do not see ITS activities or strategies included in major investment studies. Some might argue the extent to which that should and could occur, but there are a lot of different ways that ITS could become part of such studies. Typically, the ITS-type activities that have been incorporated into the planning study include traveler information systems or ramp metering. This usually represents two or three sentences in a report and does not really provide an integrated approach for project design.

The third principle is that ongoing operational responsibilities should be determined before the project is programmed. If someone is going to be responsible for project operation, that agency or group should know about it. Otherwise, people get handed projects and their willingness to enthusiastically give them priority can be a problem.

The fourth principle is that written operational plans and procedures save time, money, and confusion. I tend to believe that the ITS plans being done around the country are grand plans and concepts, but have not really thought through in sufficient detail how the concepts will work. A new staff person managing ITS actions does not often have a lot of information regarding operational responsibilities. I do not see a lot of coordination between systems operated by local, state governments, and toll authorities. One of the things that ISTEA has done is to bring more players to the collective table, at least for

discussion and coordination of how this takes place. This really is another level beyond where you get to transportation plans and TIPs, but it is one that I believe needs to be given more attention.

The fifth principle mirrors this concept of bringing people to the table—those responsible for operations should be involved in planning. The worst approach is to develop a concept design, and then bring the operations people in, and say “go operate”. If you had paid attention to their concerns and issues the design approach might have been done differently. This has an institutional component to it. In general, experience has shown that facility and service owners will generally be the operators. However, other agencies and groups could play a critical role in making sure the facility works. For example, in incident management, we have police agencies and emergency services which are very much a part of the traffic management activities that go into the overall operation of a facility. DOTs tend to supply a support function in this case. So the challenge is to bring these groups into the project planning process

Traveler information systems need multi-jurisdictional coordination, possibly regional authority or private operation. Traveler information systems span a broad geographic area. People are interested in getting from A to B, and these points do not often fall within individual jurisdictional boundaries. A lot of time is often spent trying to identify the appropriate operators of the system. For traveler information, there is more of a likelihood and need for not only multi-jurisdictional coordination, but also for a more formal arrangement. This involves, in some cases, giving up some responsibility, trusting the other folks to carry it out. Transcom in the New York area and the I-95 Coalition are examples of this process.

What are potential areas for regional, strategic operations planning? By strategic, I mean, in some cases, action that could be more short-term in terms of implementation, but which also involves longer term elements. There are two things that drive the need for strategic operations planning. First, do the issues cross jurisdictional boundaries?; and second, do they cross modes? The following four areas seem to be ones where strategic operations planning is appropriate.

- *Regional traveler information:* I have already mentioned this several times. Traveler information systems involve a multitude of agencies, and certainly covers many transportation modes. They involve DOTs and transit agencies which tend to be regional actors. There is a pretty good argument if you are trying to put together a cohesive regional traveler information system

that you really need to bring all of these activities together under some sort of a strategic element.

- *Travel demand management(TDM):* These types of actions often involve multiple geographic areas, numerous agencies, and of course intelligent transportation systems. A number of areas have already prepared ITS strategic plans, or early deployment projects, that include a heavy TDM element. These are to be done not independently, but within the broader transportation planning process.

- *High Occupancy Vehicle Systems (HOV):* HOV systems inherently involve numerous agencies that both own (e.g., DOTs) and use (e.g., transit agencies) highway facilities. One of the major problems with early HOV systems was that their design did not account for how the facilities would be operated and used. Therefore, these types of facilities and systems need to be carefully planned and designed with eventual operational issues at the forefront of the discussion.

- *Intelligent Transportation Systems (ITS):* In the case of ITS, we have coordinated communications issues to deal with, usually across multiple modes. Some of this coordination should come from the planning process in that ITS strategic plans take guidance from the broader transportation planning process for the long-range plan, and from other policy objectives that the region has already defined. But the ITS strategic plan should feed information back to the planning process, much like an MIS might on a geographic level. This is really the functional level of activity.

Let me end by identifying a couple of other issues that will tremendously affect operations planning and implementation. Liability has been one that DOTs have not taken lightly. As we get into areas that involve interaction of the roadway and the vehicle, the liability issue becomes an important consideration in the operational realm. In an accident, whether it is the vehicle's fault or the roadway's fault is a huge legal issue. This could be one of those issues that perhaps slows down progress in this area.

Estimating operations costs is not always easy to do. Enough information must be developed to have a credible plan. Likewise, establishing operational benefits can be a major challenge. One of the things often lacking, although I have seen some progress in certain areas, is the type of criteria that influence project selection. The traditional TIP criteria have largely focussed on capital activities. The more operations becomes involved in these decisions, we have to become more capable of incorporating operational benefits and costs into the prioritization process.

Finally, we must better control the cost of operations. This is a major area where planners can

capture some attention and show some value to this operational area. There are some areas where we can perhaps help reduce and minimize the cost of operations, again working as partners with the operators themselves. A lot of examples can be found in ITS, but some of the ideas are really more in terms of management, ways to reduce staff requirements. This might include traffic counting programs. One of the big complaints we hear about ITS is that it will only increase the cost of doing business. So where are we going to find the money? We need to find ways to minimize the cost of any additional operational activity and use operations creatively to reduce costs where possible. In addition, ITS actions can provide information that will allow planning activities to be done more efficiently.

Ultimately, what drives any program is what makes taxpayers and voters happy. This is one of those areas where ITS and other operational activities are hard to put your fingers on. It is easier to see a new highway lane than it is a new fiber optic cable that allows movement of information and communications. This is our challenge. As transportation professionals, we need to better articulate how customers benefit from operational strategies. After all, we are in a customer-oriented business. This is what ISTEA was really all about.

ALAN MEYERS, VICKERMAN, ZACHARY AND MILLER/A DIVISION OF TRANSYSTEMS CORPORATION

My talk today will focus on operating and managing transportation systems from the freight perspective. There are several trends that are driving the freight industry, not only in the United States, but worldwide.

The first trend that applies to all freight transportation modes is the impact of deregulation on the system. Because of deregulation, many formally distinct services are being integrated. From the shipping side, we see one competitor buying space on another's vessel, vessel sharing agreements, box sharing agreements and increasing consolidation of services. Importantly, there has been a significant increase in the number of partnerships in the rail and trucking industries. The private sector of its own accord and for market reasons is leading the way in the integration of intermodal services to minimize the dollar cost of point-to-point freight movement.

The most significant trend is the substantial increase in freight movement. The U.S. currently ships 967 million short tons of cargo through 185 commercial deep draft ports having 3,200 berths and 1,900 terminals served by 28 terminal railroads. This is a huge economic engine in the U.S. Growth in the seaborne container trades, and

this means containers and bulk freight that can be placed in containers, is projected to skyrocket through the year 2010. Current projections see exports growing at 6.4 percent per year, and imports at 2.8 percent per year. This combined rate of freight movement into and out of ports of over 9 percent per year over the next 15 to 20 years means tremendous capacity pressures at many U.S. seaports.

American ports are not the largest ports in the world. Put together, all of the U.S. ports are just about the size of Hong Kong. They are also not the best ports in the world, and they are not the most efficient. Some of the Asian ports are about twice as efficient on a throughput per acre basis as U.S. ports. So, there are increased efficiencies that can probably be gained in American facilities based on the model we see in Asia.

Another trend that will affect the movement of freight is the propensity to use bigger ships. For many years, a major constraint on container ship design was the width of the Panama Canal. Container ships had to be no wider than could fit through the Canal, and American ports were designed on that basis. Now what we see is something called post-Panamax vessels that are too big to fit through the Panama Canal. There are currently 16 such ships existing in the world, with 53 more on order. In a few years, we will have at least 69 vessels on the order of \$100 million per vessel plying the oceans which are too big to go through the Panama Canal. These new vessels can carry on the order of 4,000 to 7,000 TEUs per vessel (where a TEU is a 20-foot equivalent unit and a normal standard 40 foot size container is two TEUs). No crane in existence at any U.S. port can handle a 7,000 TEU vessel. These vessels will require berths much bigger than any existing berths. The deployment of these vessels in the world fleet has huge implications for the development of new terminal facilities throughout the U.S. In addition, these vessels will likely require deeper channels. A study is currently underway on the implications of these new vessels. Does it mean fewer ports? Does it mean a hub and spoke system with possibly one to three supersized port facilities on each coast serving smaller facilities with smaller vessels?

Another trend in shipping technology is an attempt to bridge the gap between standard air service which is seven days and 21-day service via ocean. What can bridge that gap? We are beginning to see something now called "fast ship" which will attempt to provide ocean service at the same speed as air cargo service. A fast ship is basically twice as fast as a standard oceangoing container vessel, has a smaller capacity, and must be loaded and unloaded with specialized technology—airlift vehicles that are rolled on and off the vessel like rail cars. This has huge impacts on

the amount of space and the type of design of landside facilities.

Inland waterways are going to continue to be important. However, we are not likely going to see the explosive growth in inland waterway traffic as we will in container traffic. We will see a growth on the order of one to two percent sustainable over a long period of time. These waterways are a key part of the national transportation system.

Once cargo arrives in a port, it must be moved inland by truck, rail or water. Inland distribution of cargo is the key driver of landside traffic concerns associated with ports. In 1984, we had one double-stacked train set between Los Angeles and Chicago. In 1989, we had 114 train sets; by 1993, this had reached 241 train sets. We have seen explosive growth in the use of intermodal rail. In 1987, LA/Long Beach was moving about 15 percent of its cargo on intermodal rail. In 1989, it was close to 50 percent. The great thing about intermodal rail from a terminal operations perspective is that with intermodal rail you can move cargo out of the terminal in about half the time. By so doing, you effectively double the throughput capacity of the terminal. In addition, you shift movements from truck to rail, and without dock rail it reduces the travel distance that a container has to move from the terminal to the rail head. If you can provide direct rail access to the dock, you can eliminate drays through your local communities potentially solving congestion and safety problems.

One of the impacts of intermodal rail service is that U.S. railroads are reducing the number of intermodal terminals they operate and are building more of a hub system. One of the problems that intermodal rail has caused on the transportation system is the need to retrofit bridges that cross rail lines to make sure there is sufficient clearance.

With all the growth in intermodalism and intermodal rail, what happens to trucks? Projections indicate that truck use is expected to increase substantially through the year 2020. There is not going to be a decrease in the amount of trucks on our systems. In 1991, trucks handled about 41 percent of the inter-city freight tonnage in the U.S. A recent study by DRI and McGraw Hill concluded that currently it is at a 47 or 48 percent level. If one considers revenue-tons, which is weighted for the value of the cargo, trucks which carried 17.9 percent of freight movement in 1980 increased their share to 31 percent in 1990.

The other interesting thing element of freight movement is that associated with air cargo. In 1980, air cargo accounted for 0.1 percent of freight movement which is a very small percentage. However, by 1990 it had reached 0.3 percent. So although air cargo is a small share

of the market, it seems to be growing rapidly and Boeing predicts that it will triple over the next decade and a half.

Having given a context for the future of freight movement and showing the challenge that such movement will mean to the nation's transportation system, what are states' roles in the freight movement system? Their role is critical. The activities associated with the movement of freight can be divided into facilities and connections. On the facilities side, there is ownership, development, operation, and maintenance of airports, seaports, truck and rail facilities by states. On the connection side, it's ownership, development and operation of the navigation channels, highways, and rail connections by states. The federal government is a major stakeholder in this because they own, operate, and maintain a lot of intermodal facilities, particularly in the military. States often have port authorities that centrally manage the facilities of their seaport systems. They operate beltline railroads in a lot of cases. In other instances, states will operate ports, but through chartered state port authorities rather than the DOTs. The most common structure for port management is through local and regional authorities. However, private operators can play a significant role as well. A recent study in Savannah, Georgia, concluded that about 40 percent of the waterborne commerce used facilities provided by the state port authority and 60 percent was associated with private facilities located along the Savannah River. So, in a state that was dominated by a state run port authority, the state was not even the single largest provider of terminal storage capacity.

I think Florida's experience with statewide freight planning is really ground-breaking. This effort inventoried freight facilities to determine such things as, what modes connect to these facilities? what types of linkages are available? is there double stack clearance? what is the condition of the infrastructure? are there pedestrian access needs? what is the linkage distance to the national highway system and to other modes of interest?

Scoring criteria were then used to assign points to the attributes of the system.

The State of Oregon has used performance measures at both the system and facility levels. For example, you might look at facility capacity in terms of the percent utilization; accessibility in terms of operating hours, connectivity, and the availability of connecting modes; delay experienced by freight moving in and out of the facility; and safety. Oregon has tried to integrate performance measures and data collection on facility operations into a prioritization model which will make comparisons and judgments about the highest priority needs. This effort will also serve as a database on general information about freight facilities.

California is also developing similar types of performance measures both system wide and facility-based, and is integrating these into a large database management and analysis system. The database management system is being distributed now to MPOs in California for their use. Performance measures are defined for passenger transportation based on existing data. Performance measures for freight have been defined, but have not yet been integrated into the analysis package. One of the key issues is the need to disaggregate commodity flow data from a county level to a corridor level. For example, some movements between Orange County and LA County have six major corridors between them. Figuring out how much of the county-to-county movement is assignable to each corridor is a very substantial undertaking.

Using operational information to minimize the need for capital investment is clearly the direction for the future. Information technologies can be applied in a couple of different areas—facility operations, managing access to the system, user and customer decision support, and finally planning and prioritization. Intelligent collection and utilization of data is the key to these planning efforts. There is a lot of data out there. It is just a case of using the least data the most intelligently. We did an inventory of about 20 different information technologies as they might be applied to freight facility and access systems. In looking at port facilities, or any kind of intermodal freight facility, different components of the facility govern how efficient it is going to be. An ocean terminal will be governed by the capacity to accommodate vessels, to store cargo within the terminal and to move cargo out of the terminal by intermodal rail or truck through a gate. The key is to optimize the capacity of each of those access/egress points so that we are not overinvesting in capacity that is not needed. A terminal at the Los Angeles/Long Beach port complex is a good example of how to optimize for flows. The terminal was designed to accommodate very major queues that build up during the day. Simulation modeling was used to optimize the design of the facilities based on flows in and out.

Planning for inside the terminal versus outside is a critical concern for states. Are they going to become more involved in planning the inside of terminals? It has historically not been their purview, but as they become increasingly the owners and operators of systems, are they going to have to be involved in private facility operations inside those terminals?

Finally, partnerships among public entities are a vital element of freight planning because so much of freight movement is not under the control of DOTs, but instead under control of regional and local authorities. Florida

has led the way by establishing a Florida Ports Council. Other efforts are underway. Public/private partnerships are also critical. Many private freight industry groups are modally oriented. We need to bring all freight interests together to determine what is the most appropriate policy for the nation. Efforts like the Freight Stakeholders National Network is an example of what needs to occur. Under one umbrella, freight interests could possibly speak with one voice concerning their needs and requirements, and perhaps even establish a consistent and consensus-oriented freight planning agenda.

QUESTIONS

1. *Given the resource constraints that we are struggling under and are likely to be for some time, and given at the same time the pressure for provable transportation investments that affect economic development do we need to be building into our statewide planning and programming processes some greater priority to something that you could call a short-range perspective. Do we need a separate short-range planning process? Do we need strategic*

Conference Participant: I often get frustrated with the abstractness of many of our planning processes as compared to the nitty gritty stuff and to the opportunities to gain economic advantage in a demonstrable short-term way, particularly on the freight side. With some notable exceptions, such short-range and more immediate issues have been weakly pushed in the current round of planning. Maybe this is an unfair characterization, but I don't think operations issues that arguably can provide some significant benefits from the perspective of system operations will get a fair hearing in today's planning process.

Conference Participant: Operations and planning are not strange bedfellows. If you look at the real time information systems that are needed to operate a system and to continue to improve its operation, these are the same types of information you need for planning. It is part of the long-term and short-term perspective on improving our transportation system. I deal a lot with folks in the trenches. These folks have responsibilities, and constituencies they are trying to appease and still get the job done. To them, planning is always getting in the way. If we can figure out how to make the information that they need a bit more accessible or relevant, we will go a long way to better integrating operations and planning.

2. *If operational problems are responsible for say half of the delay in metropolitan transportation freight or passenger*

movement, does the way we approach planning and programming under ISTEA make sense? Are we involving the parties that you have to in order to have any impact?

Conference Participant: We have a longstanding incident management program as part of our systems operation management system. Law enforcement agencies are involved in this as a partner in the network. The idea of better linking operations and planning requires that such institutional linkages occur as well. We are going to move more into operating our transportation system and thus we need different skills to do that than we did to build the system. The planning process is now going to have to be more focused on the operational aspects of system management. I do not think this will be a problem, because the planning process helped everybody come to grips with the reality that we couldn't build our way out of congestion.

Conference Participant: We are now in a financially constrained planning and programming environment. Some elements of ITS will allow us to be more efficient, and are going to allow us to do a better job with scarce resources. Therefore, we must figure out a way to better incorporate these operational issues into planning. We need to be concerned about identifying the best format for bringing representatives of operations agencies into the process. There are certain formats where individuals important to operations planning feel comfortable and fit in. Then again, these same formats might not be comfortable to others. For example, not too many highway patrol people are comfortable in a planning environment, but there are other environments where we can bring them in, have them contribute, and bring all this input back into the planning process.

Conference Participant: Transportation planning used to be really traumatic. We did it every 10 years and then it took everybody five years to adjust to what we had come up with and then we would start over. As we become more customer-oriented, we must look carefully at the organizational impacts of having a planning, programming and finance process that is more open to our customers. The expectation is that you pull all the stakeholders together and they will participate in the discussions the precede the development of the plan. So, there is a different way of doing business now which inevitably begs the question of whether we are organized correctly, the inevitable centralization and decentralization issues. We have taken some very dangerous steps in decentralizing our investment process and are in the process of discussing

how much authority and responsibility should be devolved to districts.

Conference Participant: Our DOT is viewing the provision of services and operations as being separate and different from the infrastructure part of what the department does. A lot of what we do, e.g., transit and also maintenance operations, is a service that affects our customers in a way that is different from the construction of infrastructure. So, in my planning organization I have a unit now called transportation services development where we do the planning for transit and we have a group whose intent is to interact with private organizations. Some of the things that we have to pay attention to include the effect that our activities have on users of our transportation system. Our provision, maintaining, and costing of the highway system affects the truckers considerably, but that is their livelihood. In return, the truckers support the economy so we need to think carefully about how we affect our customers. If we introduce unpredictability in their trucking schedules, it affects their ability to do business. Those people often don't call to complain, they just go somewhere else if you create too much of a nuisance for them. So there's a world out there that we need to pay attention to.

Conference Participant: In my state, we have treated our customers over the last several years in a formal way though task forces and committees. Our customer base is much broader than what it used to be. And, of course, externally, as a result of ISTEA, our customer base is much broader. So we spend a lot more of our time in meetings, we do a lot more outreach, and we make sure that our entire organization is aware of what our customers want.

Conference Participant: In our case, we feel that we can better serve our customers by decentralizing as many operations as possible. We are very decentralized in project planning and other activities. Operational decisions are made at the district level. Programming is done at the district level. The district planning director is equivalent to the chief engineer at the district level which is a reflection of how much importance we place on planning. The responsibility for statewide planning is in the central office, but the development of the state plan is done through a process centered on the districts.

Conference Participant: We are also in the process of decentralizing in our major metropolitan areas. We have dedicated district staff to coordinate with the MPOs on a day-to-day basis. We are using our regional planning commissions at the district level to identify regional

priorities. These commissions are not regional transportation planning organizations, but rather broad-based economic groups. We are also setting up customer service centers specifically to deal with customer relations in all of our district offices and to gather data on customer desires, wants, and needs.

Conference Participant: One of the things I am noticing in my state is the explosion of new ideas and new approaches to planning. We want to do our traditional planning better, we want to have more time for innovative partnerships, we want to be at the forefront of making our process more effective and efficient, and we want to help truckers move freight a little bit easier and faster. We want to do all sorts of things to serve new customers and to coordinate all of our actions at the state and MPO level. The unfortunate factor, in my view, is that we don't have more money to do all of these activities and I am not sure we will have any more than we have now in the future. The "new topic of the day" gets on your agenda and often reaches the top while we are still responsible for doing all the things we have always done—data collection, data management, analysis, and evaluation. We need to take a little broader view of our activities and push for more resources, not less.

Conference Participant: It is important as we think about the future of statewide planning that we consider a stronger link between operations and planning. The common wisdom is that planning agencies will not likely (willingly) promote operations plans as part of the planning process. As a matter of fact, we have some MPOs that have put their money into ITS deployment. This was a very interesting decision, particularly since it was some years ago. When we looked at the composite of the long range plans in the state, we found a lot MPOs assigning future monies for those types of operations. However, I do not think that these decisions came about because MPO board members really thought about ITS. I suspect that these priorities were the result of the technical process. So, in order to maintain this momentum when the time comes to actually program funds for these types of projects, we are spending a lot of time doing public information on the benefits of ITS methods. Public officials are not aware of the technology and the benefits. And frankly, a lot of it is because the benefits are not really clear to many of us, even when we have been in the business of running traffic management systems. It is hard to quantify the benefits.

SESSION #6: BRINGING IT ALL TOGETHER

CHARLES HOWARD, WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

I would like to present 10 major points that in our experience are critical in "bringing it together."

1. *Planning, programming and budgeting need to be linked to make planning relevant.*

A long term plan that is not linked to short term implementation programs and budgets is useless. In Washington, past planning efforts were only related by accident to the budgeting process. In 1993, a new programming process was enacted by the Legislature which specifically ties short term programming to the long range plan. Under this law, the plan defines the needs and the program must be built off the plan. The plan and program also have consistent structures to more clearly make this linkage. In 1996, the department formalized a six year plan process, which serves as the implementation element of the long range plan as well as the short term program, guiding budget development. This real tie to the budget development is a key in making planning relevant. In Washington, the planning and programming functions were organizationally merged which is helping this integration, but organizational merger between these functions is not as important as the planning, programming, and budgeting processes being integrated either in law or practice.

2. *Financial constraint is essential to make planning an effective decision-making tool.*

Washington embraced the concept of financial constraint for its statewide transportation plan, which is consistent with the state's growth management program and federal metropolitan planning requirements. By requiring that the plan be limited to some reasonable funding scenario, the planning process adds value by narrowing unlimited possibilities to a more realistic set of high priority improvements to pursue. In addition, financial constraint allows the state to communicate clearly what can be reasonably expected so that local governments can reflect these in their local comprehensive plans, and what can't be reasonably expected to ensure that unrealistic expectations are controlled. This is important to the development community, citizen groups, and others who want a higher degree of certainty from the planning process. However, it is important to note that

financial constraint does not mean holding plans to current revenues. Washington chose a historical funding trend as the target for the long range plan. While this target will require significant revenue increases to achieve, it is considered to be a reasonable target for long range planning. It is important to keep a balance between the hard realities of today's funding levels and the ability of the plan to create a vision for the future.

3. *Governance of the elements of the transportation system needs to be respected in the statewide transportation planning process.*

A fundamental aspect of statewide transportation planning is that transportation facilities and services that are vital to the state's interest are not all owned by the state. It is important that the statewide planning process respect the other governments' ownership interests, and that the state treat these other owners as equal partners in the planning process, capable of making the important decisions about the state's future. In Washington, we recognized this by developing the plan in two components: one for state-owned facilities (Highways, Ferries, and state-owned airports) and one for "state-interest" facilities and services (Public Transportation, Aviation, Intercity Passenger Rail, Freight Rail, Marine Ports and Navigation, and Non-motorized). The state-interest component was developed with heavy involvement of stakeholders which represented the interests of the other system owners. So, what is the purpose of a statewide transportation plan? It clearly is not to control non-state transportation partners. It's purpose is, however, to guide state-level investment decisions in all modes; to influence transportation partner decisions through cooperation and mutual problem identification; and to provide a state-wide focus on facilities and services of state-wide significance which often cannot be done at the local or regional levels.

4. *Not all statewide transportation planning needs to be done by the state.*

Just as many state-interest transportation facilities and services are owned by other governments, state transportation agencies must recognize that parts of the statewide plan, from needs identification to selecting appropriate solutions will be done by these other governments, and this decision-making needs to be respected in the statewide planning process. Often the

expertise required to understand these varied issues is not contained in the State DOT, and it is appropriate that the governments with the profound knowledge be in the drivers seat. State DOTs cannot be controlling in this relationship: the key is developing a process of coordination and cooperation and mutual respect.

5. *There is a need to be flexible and innovative in public involvement.*

It is difficult to get public interest in statewide policy and long range plans, because often the relationship to the individual is not clear. Also, the public is inundated with planning at the local, regional and state levels that confusion is a real possibility. WSDOT has tried to be realistic with public involvement efforts, trying new methods, keeping what works and dropping what doesn't work, and continuously evolving. What seems to work are:

- Stakeholder committees which pull together people directly involved and affected by the decisions;
- Broad-based newsletters especially tapping into existing interest groups. Washington had a very positive experience with AAA, who included a statewide plan brochure in their news magazine which resulted in a high response from people who hadn't been involved in transportation planning before.
- Going to where the public is already, instead of asking the public to come to us. Washington set up display booths at county and state fairs, giving away state highway maps in exchange for people filling out a survey.
- The Internet has been a big advance in the planning public involvement program. The DOT homepage allows material to be regularly posted and updated, provides opportunities for immediate response surveys, and reaches a growing market share as the internet reaches into more homes and businesses.

6. *Planning documents need to be understandable to the public.*

A large challenge we have as planners is to get out of the jargon-filled text that usually makes up a plan, and to explain what the plan means in "kitchen English". This does not mean that the plan has to avoid complex issues or technical material. Planners just need to recognize that these concepts have to be written to be understandable, and to do a good job of explaining technical details. Formatting, pictures, graphic design, and summary brochures or executive summaries all are needed to make it so people aren't turned off of the plan because of its structure rather than its contents.

7. *Both the plan and the planning process need to be understandable to the policy makers.*

When asked in a survey what was the most useful technical "software" for developing the transportation plan, an easy response was Power Point. If policy makers, whether they are the Transportation Commission, Department of Transportation Executives, or the Legislature, cannot understand the concepts and decisions that they are being asked to make, the planning process is worthless. Planners need to think as much about how to communicate the plan to decision makers as how to do the technical analysis.

8. *Top level management support of the planning process is essential.*

For statewide transportation planning to be successful, executive managers of the Department of Transportation have to see a benefit to the plan, be committed to using the plan to make decisions, and accept the plan as a guide for their own actions. Without this top level support, the plan becomes another exercise.

9. *Not all planning needs to be done by planners.*

As the Transportation Planning Office, our job is to facilitate the planning process, not do all the planning. In fact, most of the actual planning technical analysis, policy setting, and other planning activities are done by program staff. Two examples are the pavement preservation plan, which is developed by the pavement engineers through the pavement management system, and the bridge preservation plan, produced by the Bridge Office utilizing the Bridge Inventory and Management System. By having program staff actually involved in plan development they buy into the results, ensure that the plan reflects their reality, and provide the benefit of more creative minds in the process.

10. *Plan organization needs to reflect department organization.*

Planning is a tool for decision making. Therefore, the plan needs to be structured in a way that supports decisions that need to be made. In Washington, our plan is organized modally, to reflect our department modal organizations, and by programs within modes, to reflect the budget categories that the plan will guide. Having the plan mirror the organizational structure reinforces the role of the plan as a useful decision-making tool.

**BARBARA KIRKMEYER, WELD COUNTY
COMMISSIONER, COLORADO**

In order for you to understand where Colorado is with regard to statewide transportation planning, you need to hear how we started. I have been a county commissioner since 1993 which is approximately when we started the statewide transportation planning process and the development of regional plans. A neighboring county commissioner drew a cartoon that basically captures where we were at the beginning. It was a Neanderthal man down on all fours with a wheel on his back, and the caption read, "Transportation before we understood the wheel." That is how we started.

The Colorado transportation planning process is influenced by two major pieces of legislation. The first one, of course, is ISTEA. We also had what we called the CDOT legislation which was passed in 1991. In this legislation, the General Assembly changed the Department of Highways to the Department of Transportation. Both pieces of legislation require a statewide transportation planning process in which not only is a preferred plan identified, but you also have to do a constrained plan. Both require regional plans for the MPOs. In the state legislation there are optional regional plans for the rural planning regions, and in the federal legislation the state DOT is to include rural needs in the planning process. The state legislation also established a Statewide Transportation Advisory Committee. Our legislation did not address the transportation needs of Indian tribes, whereas ISTEA called for addressing such needs. Our state legislation did not provide the funding for transportation planning, and in ISTEA transportation planning is eligible for federal funds. Also, the state legislation does not really address public involvement, whereas the federal legislation has fairly extensive public involvement requirements.

Colorado formed 15 transportation planning regions, 10 of which are rural regions and five are MPOs. Our largest MPO is the Greater Denver Regional Council. I chair the Upper Front Range Regional Planning Commission, and I am also a member on the North Front Range MPO. The Statewide Transportation Advisory Committee (STAC) is comprised of one person from each of these regions, and it is usually the chair of the regional planning commission who goes to the staff meetings.

The STAC represents a wide range of interests and expertise. What this means is that some of us really didn't know a lot about transportation planning when we began, whereas others had vast knowledge of transportation planning. The STAC membership consists of county commissioners, city council members and senior level staff representatives from the MPOs. The STAC reviews and comments on the 15 regional transportation plans. We

also make recommendations to CDOT on the integration of these 15 plans into a state plan. By statute, we provide advice to the Department on transportation system needs, and assist in resolving conflicts that can arise among each of the transportation planning regions or between the Department and the regions.

The process of developing a state transportation plan took approximately 3 years. We took this long because we believed in a grass-roots process. There was a lot of public involvement. In my own transportation planning region, we had meetings every other week that were open to the public. We met monthly as a regional planning commission. So, we did really try to involve the public as much as possible, bringing some new voices to the planning process. As we went through the planning process, CDOT worked with us to make sure that the process was consistent from one region to another and that planning information provided to the planning regions was also consistent. Even with this, our process still calls for flexibility to account for regional diversity.

Regional priorities are developed through a criteria-based consensus process. Each regional plan went through all of the steps, developing a mission statement, identifying goals, and then coming up with a plan that consisted not only of projects, but also a statement of policy on where we would like to see our region head over the next 20 years. We think our state plan reflects regional needs and priorities, and seeks to balance quality of life issues, mobility, environment, and economic development. It became very apparent during this process that the vision for a transportation system inherent in ISTEA and in our own state legislation was not widely shared by most people or even by most state and local officials. The same conflicts that existed before ISTEA and before our state legislation still exist. There is still a rural versus an urban conflict; roads versus transit, the state DOT versus the MPOs and local governments; and even CDOT has its own internal conflicts between engineers and planners. All of these things still exist. Another important conflict that surfaced early in the planning process was the disparity in the amount of resources that each region could devote to planning. The MPOs receive money for planning. The rural transportation planning regions receive none. These regions didn't get any staff, which meant that county commissioners in my region spent a lot of time dealing with transportation issues. The CDOT did help fund the first go-round, and they still provide some funding for planning, especially for the rural transportation planning meetings.

The planning process helped everyone learn about their own region and related transportation needs. As a new commissioner, I never really had any experience in transportation planning. So, this planning was a very good

experience. When a new Director of the Department of Transportation was appointed two years ago, he took hold of this statewide planning process and made it a priority within the Department. He involved his own executive management team—the engineers, budget officers and the policy makers. Everyone became involved and it really started making a difference. We don't just have staff meetings now. We have staff DOT meetings. The Advisory Committee and the executive management team meet together. So, when we make recommendations to the Transportation Commission, these recommendations have been developed with everyone involved.

The Statewide Transportation Advisory Committee went beyond just regional boundaries and started looking at the state as a whole which really hadn't happened in the past. I think MPOs have a problem when they only want to address the issues within their MPO boundaries. I am in an MPO that is up north and I am in a transportation planning region that is in between Denver and this MPO. Neither of the MPOs wants to address the major Interstate corridor between them. The statewide planning process brings together everyone who have concerns that cross jurisdictional boundaries, and starts educating people and sharing information. I think we started getting past some of the regional boundary issues and turf issues, and we really are starting to look at the state as a whole, starting to build consensus and finding agreement in areas where maybe there wasn't any agreement before. As we developed our plan we were also able to set priorities in the statewide plan. We developed what we call our state significant corridor system, which is a state transportation system that all of the staff members, the Advisory Committee, and even the Commission at this point feel comfortable with. This is a system that we all know we must take care of; it impacts all of us in the state.

We also noticed that our needs on this system were much higher than our revenues. Our expected revenues over the next several years are \$19.2 billion. Our price tag for the preferred plan was \$37.55 billion. This is the type of information everyone involved in such a process needs to have. We had to set some priorities and we came up with a plan that totaled \$27.36 billion which was still about \$8 billion over available revenues. We call it our priority plan. This is the plan we feel we all need and that we are all willing to work for. It isn't a constrained plan because we don't currently have the money to implement all of the proposed projects, however, this is more of a vision plan that is something we can work for over the next 20 years. We realize that we are long on recognition and short on solutions, but we have a lot of external factors influencing our plan at this point.

I find it amazing that people think that if you pass a law, you are going to change people's attitudes and

behavior. Passing ISTEA or passing the CDOT legislation in Colorado didn't change anyone's general attitude or change their behavior. In fact, the use of single occupant vehicles is probably higher now than it was 5 years ago. So, people are still driving their cars. They still have a lot of miles to travel, and they still want to live where they feel most comfortable. No government is going to them where to live and work. However, the governor about a year ago started a smart growth and development initiative. He had 1000 participants who were actually involved in this process. They met in different regions as citizen groups. We have a lot of people starting to become aware of growth issues. In fact, it is the No.1 issue in Colorado. As we went through the governor's smart growth and development initiative process, it was really interesting to find that by the end, transportation was the No.1 issue of all of these people. After identifying 100 issues, transportation was the most important and it was mostly defined as insufficient transportation financing. To deal with this issue a blue ribbon panel was formed to examine the long-term transportation funding base, and to recommend sources of new funding. The panel consists of 21 members from many different economic persuasions. The first activity of the panel will be to validate the \$8 billion shortfall identified in the plan, after which we will look at how to influence our legislators, the governor and key people in the state. We might need a state initiative ballot, but we feel we have the momentum going for some form of new revenue. People recognize that transportation is an issue in our state, and if we keep sharing information with them, they will be willing to vote for an increase in the motor fuel tax or an increase in registration fees.

Before we can do this, however, we need to bring the legislature along with us. They haven't really been following this process as much as I would like them to, even though in 1991 they passed the enabling law. In the last couple of years, the state has had a surplus of funds which have gone to highways even though the legislature said in 1991, "Do multimodal planning, do all this transportation planning." They still only want to fund highways, and I think this is just a mind set that sooner or later will change. We will continue working with them. The problem is that they went out and raised expectations through the state law. So did ISTEA. ISTEA and the CDOT legislation raised expectations, but they didn't provide the funding to meet these expectations.

Both ISTEA and the CDOT legislation have been challenging, frustrating, and disappointing. They have been challenging in the need to bring new people and voices to the table. They have been frustrating because you find out that there are different rules that we now have to play by. And they have been disappointing

because when we get to the end of the planning process, we find there isn't additional funding.

So, what is next? STAC isn't going away. We are going to continue our joint STAC and executive management team meetings. We are working now with the Department on implementing the plan, refining the process, and are already trying to figure out how to develop plan amendments. We are going to keep working. The STAC is a different tool that we have been given in Colorado, and it has really made a difference. Yes, we are local elected officials, but we are talking to our constituents pretty much on a daily basis. We understand what is going on at the local level. The partnership that has developed with the Department of Transportation has been a very positive one. It can only lead to good things. The STAC can help the Department sell the transportation plan which as I mentioned before is basically what we have to do. We view it as our transportation plan, not the Department's. If the STAC and the DOT can stick together, we should be able to resolve differences, set priorities, and build consensus.

JEFF SQUIRES, VERMONT AGENCY OF TRANSPORTATION

From 1991 through 1995, I was Director of Planning for the Vermont Agency of Transportation. Six months ago, I became Deputy Secretary of Transportation which is a political appointment. My job now is to get things done, working with the governor, the legislature, and all of the different groups in Vermont who have a stake in the transportation system, and what it provides to the state. In my new capacity, planning has taken on a new significance. It is now a matter of whether planning has provided a sufficient foundation to achieve this new objective.

Similar to Colorado, Vermont passed legislation at about the same time as ISTEAs that really reinforced what ISTEAs were intended to accomplish. Most people in Vermont feel pretty good about implementing ISTEAs. It seems relevant to a place like Vermont. We are an extremely rural state with a large percentage of the population living outside of urban areas. The Burlington area, our largest city, has about 150,000 people. So, whenever I go to national gatherings such as this, I find myself putting all of the lofty issues being faced by my colleagues into a slightly different perspective. We have transportation problems that sound about the same. The size and complexity are a little smaller, and I feel fortunate that this gives us a situation that perhaps is a bit more pliable.

We prepared a long-range transportation plan. In doing the plan, we set out to promote ideas for a future transportation system that would support the collective view of where Vermont was going. Rather than looking over our shoulder and saying this is what we have needed in the past, we looked toward the future. For example, timber harvesting has been a key industry in Vermont and the state's highway system has been critical in supporting this industry. Although land-based activities are still important, we found that the service industry, tourism, high-tech activities, and home-based activities seemed to be the direction the state's economy was heading in. So, we wanted a transportation system that supported the types of economic activities that were becoming feature components of Vermont's economy.

We spent a lot of time talking to people about what transportation could do for their quality of life. We asked them what was important, and we asked them how they would like to participate in transportation issues. Most of their ideas were addressed in the plan which made people feel pretty good. In fact, we had one of the more memorable moments in our transportation planning history when the Chairman of our House Transportation Committee said that he had adopted our plan as the blueprint for the upcoming legislative session. That felt pretty good, and in fact, he delivered on that commitment. He frequently referred to the planning document and to his network of constituents who had participated in the process. Our business groups and environmental associations embraced our plan. Our own DOT employees are now debating within the terms of this plan which means to me that the plan has served its purpose of being a major guidance document that informs investment decisions.

Let me now talk about some of the things we learned from this planning process and then offer four very simple thoughts or ideas on where we should be heading. Statewide planning has helped us to do a couple of things. It has helped us to clarify and focus our mission. As we were going through our long-range planning efforts we also were involved in an internal strategic planning exercise. The two became intertwined, and in the front of our long-range plan is a mission and vision statement that came from our strategic planning effort. Our mission was recast for us as first and foremost maintaining the existing asset base and then secondly making capital investments, but to make them strategically, focussing on healthy communities and economic vitality.

The planning process also helped us identify our customers and partners. The concept of partnership is very fundamental. We identified a number of groups, system users and providers, people who are shippers and haulers, folks like you and me who are motorists,

bicyclists, and walkers. Local officials and citizens who serve on commissions and committees on a voluntary basis were very active in our process. Local elected officials and town officials are also key partners. Another group, which we refer to as conveners, i.e., the MPOs and the regional planning commissions, played a critical role in bringing local officials, citizens, partners and customers together. We emphasized the point in our process that the MPO is an important actor not because of the staff and the fact that it is around their table that everyone sits, but rather for the individuals and groups it convenes. Key legislators were also critical. We involved legislators early in the process so that they were familiar with the plan as it was unfolding, and so that when it landed on their desk, it had some credibility attached to it. Resource and development agencies, that is, other state agencies involved in natural resource protection, historic resource protection, economic development activities, tourism, travel, marketing as well as some of the federal permitting resource agencies, were extremely important to us from our point of view in the statewide plan. Officials from the U.S. DOT, Federal Highway Administration, Federal Transit Administration and the Federal Railway Administration were important contributors to our process. We sought the active participation of Congressional staff. We feel it is really important to keep our Congressional staff up-to-date on plan development and to learn from them what their interests are. In Vermont, non-profit and advocacy groups are key players in state and local policy making, so their participation was actively sought in our process. Going through our planning process helped us sort out these groups and recognize their role in the process.

Finally, the plan helped document the financial limits that we were confronting and the theoretical full-cost of the range of improvements that would be useful.

So, we had these three important revelations during our planning process—what are we trying to do?; who are we working with?; and what resources do we have available to us? Together these revelations are leading the Vermont Agency of Transportation into the future with a plan and a planning process that is viewed by our customers as being credible and realistic. The Vermont Agency of Transportation is moving toward a new set of redefined roles. We are system maintainers and operators. This is now our primary mission—maintaining the asset base of our transportation system. Another role is to coordinate the process of planning and investment decision making which includes all of the players I mentioned earlier. We are people who are turned to for money, to support capital investment and to support operations. We are people who are turned to, and hopefully in the future will be turned to even more, for

technical advice. We continue to be builders of facilities as we traditionally have been, but the difference now is that these facilities will be more strategically focused. We will respond in a build mode in those areas where it enhances the state's economic vitality and the health of our communities.

Based on this new perspective that evolved out of our planning process, I would like to offer four ideas that certainly influence how we do transportation planning in Vermont, and I suspect might be important to your states as well. The first idea is that we ought to rethink our traditional focus on projects. The second idea is that we ought to look at extending the partnership relationship to include implementation. A third idea is that we should collaborate with the resource agencies at a program level on strategic investment. And fourth, our experience in working with our neighboring states in goods movement has been useful, which suggests that perhaps a multistate regional approach to goods movement makes sense. Let me talk about each of these in a little more detail.

I am relatively new to transportation. I came from a general background as a city planner, and I appreciate and admire the work that has been done in the area of transportation. As I have come to understand our organization and those in the other states, it is clear that these organizations were established to accomplish a mission of building a transportation system, and in particular, a highway transportation system. As such, we have looked upon our mission as a series of construction projects, and we have developed systems to accomplish this. ISTEA suggests we are in a new, post-Interstate era. This mission and the role articulated for us through the development of our long-range plan suggests that we are system maintainers. We are coordinators. We are financiers. We are technical advisers. We still remain builders, but not to the exclusion of these other roles. In that sense, I wonder whether it is time to think about the role that the "project" plays in our business.

The term "project" often dominates much of our discussion as transportation officials. We have a "build response" to problems, and the build response is becoming unaffordable in many cases and frequently lacks public support. The build response tends to be extraordinarily disruptive, includes many permit and resource issues, and lots of right-of-way issues. We have a hard time in our state getting projects done. I have found working with our one MPO that the focus on the TIP tends to be something of a distraction. We spend incredible amounts of time on project discussions—what stage the project was in, how much we are spending on the project, and why the project is taking so long. The focus on discrete projects has been a hindrance. I don't have a ready suggestions as to how we maintain a meaningful role for

MPOs, but still move away from this obligation authority and the TIP focus, but I think it is something to think about.

We have many more projects on lists and on the books than we could ever hope to accomplish. In fact, we spent this last session trying to eliminate 185 of these. We succeeded in getting rid of 75. We have 20 that stayed in, and we have another 90 that we taking a closer look at. However, this still leaves six or seven hundred projects in our program. There is no way are we going to get all of these done. So, we are looking at some other ideas.

Projects tend to follow a linear development process. You do preliminary planning, then preliminary engineering, then an environmental documentation phase, and then a right-of-way phase. It takes forever because we are dealing with a 'project'. So, maybe we should place greater emphasis on programs rather than projects, and look at planning decisions being focused first and foremost on allocation of resources as opposed to project selection. Program examples in our state include bridge rehabilitation, safety, lines and signs (a paving program), bicycle, shoulder improvement, and the enhancement program. These are areas where we can work with the legislature and with our own process to put money into a program category, and then use the grass-roots process and our decentralized district process to get the work done, hopefully in a more efficient way. I remind you again, that my job now is to get things done, so such an approach resonates with me. There is a role for projects, but perhaps not the dominant role that they now play.

My second idea is to extend partnerships to include implementation. Maybe some of you have already moved into this mode of operation, but we do very little of this. My perception is that we have Interstate-era regulations that pretty much reserve implementation responsibilities to the state DOTs. They had the expertise. They had the capacity. They were the ones who could carry out of the projects. Our problem, however, is that we are now a down-sized organization. We have less production capacity, but the demands haven't gone down. Getting things done is very challenging.

During my prior experience, I saw major capital or public works ventures like water supply or waste water collection and treatment plants being carried out through federal, state, and local partnerships where the locals were responsible for implementation. I suspect there are some models that we could look at here. Some of our programs, such as the bike-ped program, a park and ride program, or bridge rehabilitation, are the type of things that local governments could be responsible for implementation. So, I am suggesting that we move to a strategy where the state delivers financial support and technical assistance for selected classes of programs and projects with the

contracting and construction oversight provided by local government. To the degree that we need some change in federal regulations, I would be interested in exploring them. I should point out that Vermont is a state that relies the most heavily on its federal funds for our construction program, and so for those of you where the federal component is much smaller perhaps this isn't as big an issue. For us it is a very big issue.

My third idea suggests a stronger collaboration with resource agencies at a program level for strategic capital investment. What I mean by this is that the linear project development process seems extraordinarily time-consuming. The criticism we often receive is that we cannot get anything done. One of the big time consumers is the old permit clearance and resource impact mitigation component. We work with resource agencies that have expertise in these areas. However, they don't have dollar or human resources to play a proactive role in our development process. All they can do is sit back and say, "Bring us your proposal, and when it gets to a certain level of design we will let you know whether it is okay." This is not a very effective or predictable system. Often the project is not acceptable to the resource agency. We are rethinking our approach. We hope to develop a more collaborative process with more active participation from the resource agencies earlier in the process.

This prospect is now enhanced by the fact that through our statewide planning process and through the designation of the NHS, we are a more focused on those areas where capital projects are the likely response to a problem. On the NHS it seems to make sense to straighten, widen, add capacity, and add passing lanes, the disruptive kinds of things that are warranted by public benefits. At this point, we are inclined on the NHS to pretty much maintain what we have, try to stay within the right-of-way, ensure safety at reasonable speed limits, ensure a good smooth ride, but not add capacity. Therefore, I am suggesting that we develop a process that focusses on the NHS and connectors that includes identifying and addressing resource issues. This could very well mean that we put money up-front, that my agency and the resource agencies hire people together, that we do wetlands and other resource mitigation banking, and that we work as a team on those parts of the state where we have made the decision that the public interest is served by enhanced mobility.

The exchange for the resource agencies is added resources, added dollars, and knowledge that we are not going to be that disruptive off of the NHS system. I don't know whether this requires any movement at the federal level, but certainly an agreement among resource agencies to work with this would be helpful. I was very encouraged to hear Ron's comments from North Carolina

about their attempt to do corridor-level work with their resource agencies.

My fourth suggestion relates to establishing a multistate, regional approach to goods movement. We were one of the recipients of the intermodal planning grants in ISTEA. Six New England states received about \$500,000 to develop a process and plan of cooperation. In that plan we ended up focusing on goods movement. We now have the classic document that talks about good ideas, but we haven't taken that next step. Freight movement is generally regional and national in scope. There is a national interest in this issue, but there is a reluctance to designate a national transportation system. We found in Vermont that it was in our interest to coordinate with our

surrounding states on the freight movement issue. We found, for example, that the State of Connecticut is essentially the front door to Vermont. If they have an idea of how to move goods, it is going to be helpful to us. We have a railroad that serves one of Connecticut's ports. Working together makes sense. So, perhaps we ought to see if our regional model of cooperation can work in other places, encourage states to work together, encourage states to identify goods movement investments and what tends to strengthen the national interest in freight. Just as we have done with metropolitan areas, let's get state and local governments to work together because it is a regional issue. Multistate activity should be supported in these areas.