

## **Multimodal Transportation Planning at the State Level** *State of the Practice and Future Issues*

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To review current practices and to prepare for future issues in its field, the Transportation Research Board's Committee on Statewide Multimodal Transportation Planning conducted a series of peer reviews leading up to the July 1999 conference on statewide transportation planning. The wide-ranging reviews looked at the implications of recent federal transportation legislation and the shift of focus away from facility planning to policy development, system management, customer needs, and financing. Topics included performance-based planning; forming partnerships with a diverse public; balancing long-term and immediate needs; investigating alternative financing; solving problems without modal biases; understanding the economic effects of goods movement; adopting new technologies; considering the environment and environmental justice; consensus building; travel forecasting; reengineering the planning process; recruiting and training qualified professional staff; and more.

### **STATE OF THE PRACTICE**

#### **Implications of ISTEA and TEA-21**

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and its regulations required states to develop and maintain their own transportation planning processes. These statewide transportation planning requirements were revised in the Transportation Equity Act for the 21st Century (TEA-21), which was signed into law in June 1998. Although the new regulations have not yet been issued, TEA-21 is expected to allow states to focus their planning on the most significant issues they face.

The statewide planning processes that have evolved since ISTEA reflect the uniqueness of each state, varying significantly in how the planning process identifies, analyzes, and addresses critical issues. Contributing to this variation are the statutory and institutional responsibilities for the state's transportation services, its size, its degree of urbanization, its growth rate, its amount of through-passenger and goods movement, its management of growth, its levels of multimodalism and intermodalism, its technical capabilities, and the role of planning in its department of transportation, particularly in making decisions concerning programs.

Although all states have produced plans in compliance with ISTEA, the more significant result of the legislation is that states have developed ongoing planning processes. Since the first round of post-ISTEA plans emerged, most states changed their focus from producing a plan in the form of a document to establishing a statewide transportation planning process. In many states, this process is tied directly to other planning-related processes, such as the development of vision plans, strategic plans, business plans, statewide transportation improvement programs, management systems (e.g., for assets, congestion, and intermodal transport), growth management plans, air

quality plans, and environmental resource plans. Statewide transportation planning processes also have become better coordinated and integrated with planning at the metropolitan, regional, and multistate levels.

### **Evolving Focus**

As the focus on issues changes, so does the evolution of statewide multimodal planning. There is far less focus on facility planning now than in the past. The attention instead is on policy issues, system management and preservation, system operations, system performance, customer needs, financing, and fiscal constraints. There also is increased focus on transportation's role in achieving such societal goals as efficiency, equity, a sound environment, livability, and a good overall economy.

## **CURRENT AND FUTURE ISSUES**

Looking forward to the new millennium, there are several key issues that practitioners and researchers in the field of statewide multimodal planning must face. These are described briefly below.

### **Performance-Based Planning**

Governors, legislators, and the public increasingly are holding transportation agencies accountable for measuring system and agency performance. Statewide transportation planners are expected both to develop goals that are measurable and to report on progress in meeting these goals. The focus has shifted from measuring output to measuring outcomes, and from measuring the performance of a single mode to measuring the performance of the entire transportation system. At times, planners also are expected to measure progress toward goals that are not directly tied to the transportation system but are influenced by it. Although simple in concept, implementing this kind of performance-based planning has proved more difficult than expected. A major challenge involves developing objective measures that are not mode-specific but use data that are readily and regularly available. Questions have been raised about the appropriateness of developing performance measures—and particularly performance standards—for goals that a transportation agency cannot control. Performance-based planning and measurement will be major issues in statewide multimodal planning for years to come, particularly when used to guide agency investment decisions.

### **Customer-Based Planning and Partnerships**

A related issue is the role of the customer in statewide multimodal planning. In many states, customers no longer merely provide comments on the plans developed by transportation professionals. Often customers are actively involved in identifying and analyzing issues and in developing the plan itself. Customer involvement has changed the methods for involving the public, the nature of the issues identified, and the tools for analyzing and presenting the plans and the transportation solutions. Planners must ensure that all interests are equitably involved in the planning process, particularly minority and low-income populations that historically have been underrepresented. Successfully addressing transportation needs in the future will require partnerships, many of which will develop during the planning process. The ability to work together with diverse partners, to reach consensus on contentious and complicated issues, to arrive at win-win solutions, and to find solutions that do not compromise the long-term objectives of any group will be critical to progress on every front.

### **Management and Operations**

The post-ISTEA era brought a major shift in focus at both the federal and state levels. The focus changed from planning and building the transportation system to managing, operating, maintaining, and preserving it. Planning's role in this transition has varied considerably from state to state and continues to evolve. As asset management systems develop and become more powerful tools, they can assist statewide planners with databases and analyses.

The potential for congestion management and intermodal management systems to serve as tools in statewide planning has yet to be realized. With the evolution of intelligent transportation system (ITS) technology, it is critical that decisions about deploying technology be made in conjunction with statewide and metropolitan plans. More needs to be understood about the benefits and costs of these systems and how they compare with alternative transportation investments. Planning must extend its focus from primarily long-term needs and facility investments to include current operating needs. The planning process must assess the immediate and long-term trade-offs.

### **Planning and Programming**

ISTEA required that long-range plans developed in metropolitan areas recognize financial constraints. Although this same requirement was not imposed on statewide plans, financial planning and financial management have become important considerations at the state level. Taking financial and programming considerations into account in planning has introduced a greater sense of what actually can be accomplished during the life of a plan. In several instances, a sensitivity to these constraints has helped focus planning discussions on the needed revenues. It also has resulted in a focus on innovative financing alternatives to address the long-term needs identified in the planning process.

Although directly linking the plan to the statewide transportation improvement program is becoming the rule rather than the exception, it is still not universally the case. There is some concern, too, that an emphasis on financial constraints might inhibit visionary planning or become an excuse not to promote the case for more revenues to address transportation needs. As statewide financial planning and the link between planning and programming evolve, it will be important to share best practices and lessons learned.

### **Multimodal and Intermodal Planning**

Both ISTEA and TEA-21 intended the federal government, states, and metropolitan areas to "level the playing field" among the modes by developing solutions to transportation needs without a modal bias, and by using the full range of multimodal and intermodal solutions available. A massive accumulation of unfunded needs during the years leading up to ISTEA, combined with the long periods for developing transportation projects, led to a planning process that focused on playing catch-up with previously identified needs and projects. This approach prevailed in the early 1990s, precluding a fresh look at ways to solve problems.

Although multimodal and intermodal planning are not new, analysis tools and performance measures that allow for mode-neutral and multimodal evaluations are woefully inadequate. Planning still takes place mostly at the modal level, and statewide plans often are a compilation of modal plans rather than a series of multimodal and intermodal solutions to identified needs. Planning occurs in this manner in part because responsibility for planning, programming, design, implementation, and operations is

fragmented at the modal levels among different agencies. State departments of transportation find it difficult to plan and to make recommendations for modes not under their control. Successful examples of multimodal and intermodal planning processes should be documented and evaluated, with particular attention to how institutional issues can be addressed successfully. Technical tools that allow mode-neutral and multimodal evaluations also need to be developed.

### **Goods Movement Planning**

Since the passage of ISTEA, goods movement planning has received much more attention in the statewide planning process. Better data have become available through the Bureau of Transportation Statistics (BTS) and other databases. More staff resources have been devoted to goods movement planning. Several states have developed freight forecasting models. Access to major intermodal transfer facilities such as airports, ports, and rail terminals has been a focus of many statewide planning efforts, particularly with a view to the National Highway System's intermodal connectors. However, significant changes also are occurring in the economic phenomena that affect goods movement, such as the globalization of the economy, free trade, just-in-time delivery, and tremendous increases in high-value, low-weight freight. At the same time, major changes in the freight transport industry will have dramatic implications for freight demands; these changes include the consolidation of the port business into a limited number of superports serving substantially larger ships, the merger of railroads, and the increasing percentages of goods transported by container. These changes will affect statewide planning in ways that cannot yet be fully understood. States continue to grapple with the appropriate role for state government in transportation services primarily provided by the private sector. All states face challenges in trying to develop public-private partnerships in goods movement to optimize economic efficiency. Capacity constraints in the goods movement system can be expected to become major issues in statewide planning with changes in demand. Further research into the implications of these changes is necessary to enable us to accommodate future goods movement requirements. Additional documentation must be developed for the institutional arrangements that best support freight interests.

### **Technology**

Rapid changes in technology will change statewide transportation planning over the next few decades in ways we can only imagine. Technology will make data and information available that previously had not been available for the transportation planning process. Our ability to store, process, and analyze data and information will revolutionize our ability to answer questions that previously were left unanswered or that were answered subjectively. Technology will change the nature of trips made and of trips not made. Through advances in telecommunications and the more prevalent use of telecommuting, teleconferencing, and teleretailing, trips that are made today might not be made in the future. ITS will be used more extensively. Technology also will reduce some of the costs and effects of transportation through improved emissions controls, more fuel-efficient vehicles, and safer vehicles. The impact these changes will have on statewide transportation systems is not understood. Statewide planning processes need to be better equipped to address the effects of these changes in both the short- and long-terms.

**Environment and Sustainability**

Historically, consideration of the direct and indirect environmental effects of statewide transportation plans has been superficial at best. In-depth environmental impact analyses usually have been relegated to the project development process. In the future, more attention will be given to the secondary and cumulative effects of system-level transportation decisions, including the effects on land use patterns and on larger-scale environmental systems, such as watersheds. Sustainability will become an important consideration in transportation-system decisions and therefore in statewide planning.

Only a few states have enacted growth management legislation. However, as sprawl continues to cause travel growth in excess of population growth, the relationship between land use and transportation will become a key issue in statewide planning. We can learn from states that have begun to consider these issues and to develop new and better methods for analyzing the secondary and cumulative effects of statewide transportation decisions. Debates between those who believe transportation capacity should respond to demand and those who believe that transportation should be a tool of social, environmental, and land use policy will continue as a central issue in statewide planning for many years.

**Equity**

Related to this consideration of natural environmental systems is the consideration of how transportation decisions and investments and their effects and benefits are distributed among the diverse socioeconomic groups. Environmental justice has become a central issue in project-level decision making but not yet in many statewide planning efforts. The impacts of statewide transportation decisions on minority and low-income populations will become an increasingly important consideration; this will require an assessment of the equitable distribution of the benefits from statewide transportation investments. Welfare-to-work and access-to-jobs issues must be assessed at the state and metropolitan levels, especially in light of limited mobility choices for low-income workers in rural areas. Several states are examining the equitable distribution of investments between rural and urban areas, as well as the role rural elected officials should play in decision making about transportation investments. The lessons learned in resolving these issues must be shared, and effective tools for quantifying the effects of policy decisions must be developed.

**Relation to Other Transportation Planning Processes**

Statewide transportation planning is not done in isolation, but must be coordinated with other transportation and nontransportation planning processes. Increasingly, collaboration is required with ongoing local, metropolitan, regional, substate, tribal nation, and multistate transportation planning processes. These planning efforts can be effective only if they develop mechanisms to reach a consensus; otherwise political gridlock ensues, and plans cannot be implemented. Some states have established regional efforts to link planning and programming at the state, metropolitan, and local levels. Given the different interests and goals of officials at each level of transportation planning, successful methods of collaboration and consensus building will need to be shared and documented.

**Technical Issues**

As the policy issues addressed in statewide transportation planning have changed, the technical tools have not kept pace. TEA-21 dramatically reduced research budgets for DOT. In the travel forecasting area, the focus on model improvements has been primarily at the metropolitan level. A recent committee-sponsored conference on statewide travel

forecasting identified many technical issues and research needs. Some of the areas for future attention include the effective use of national and ITS databases, filling in critical data gaps, developing models that can analyze multimodal alternatives and multimodal investment strategies, serving performance-based planning efforts, coordinating statewide and regional analyses, forecasting for modes that have not yet been introduced in the state (such as maglev or high speed rail), understanding changes in the economy and the goods movement industry, and developing simplified, policy-oriented analysis tools. As with demand forecasting, many of the other issues identified here require new and improved methods of analysis, particularly in operations and management planning. Advances in geographic information systems, graphical user interfaces, 3-D visualization, global positioning systems, data warehousing, and remote sensing provide tremendous opportunities for analyzing and displaying the results of statewide planning. A commitment is needed to develop, document, and train professional staffs in these methods.

### **Process Reengineering**

Several states have recognized the need to reengineer their statewide transportation planning processes. With the magnitude and rapid rate of change in statewide planning, reengineering efforts are likely to spread. The lessons learned from these efforts need to be shared so that each state does not have to “reinvent the wheel” in its process reengineering.

### **Staffing Issues**

Issues in statewide transportation planning have become more complex and the tools to analyze these issues require greater and more varied technical competencies. At the same time, most state departments of transportation have decreased staff sizes and many experienced professionals have retired. The discipline of statewide transportation planning requires staff with a background in many areas, but also with greater levels of technical capability. A major challenge will be to recruit, train, develop, and retain qualified professional staff for state departments of transportation.