Multimodal Transportation Planning at the State Level

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A number of recent and emerging developments have influenced current practice and are shaping future issues in multimodal transportation planning at the state level. Key developments include federal transportation legislation and a shift in focus from facility planning to policy development, system management, customer needs, and financing. Emerging trends and issues include performance-based planning, customer-based planning and the formation of partnerships, the balancing of long-term and immediate needs, alternative financing approaches, elimination of modal biases in solving problems, understanding of the economic effects of goods movement, adoption of new technologies, consideration of the environment and environmental justice, travel forecasting, reengineering of the planning process, and the recruiting and training of qualified professional staff.

Since passage of the Intermodal Surface Transportation Efficiency Act of 1991, there has been increased attention to multimodal issues in statewide planning.

State of the Practice

The Intermodal Surface Transportation Efficiency Act of 1991 and its regulations required states to develop and maintain their own transportation planning processes. Revised statewide transportation planning requirements are included in the Transportation Equity Act for the 21st Century, signed into law in June 1998. Although the associated regulations have not yet been issued, TEA-21 is expected to allow states more flexibility in focusing their planning on the most significant issues they face.

Although all states produced plans in compliance with ISTEA, the more significant result of the legislation was the development of ongoing planning processes. These planning processes reflect differences among the states with regard to statutory and institutional responsibilities for the state's transportation services; the state's 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 the making of programmatic decisions. These differences result in variations in the way critical issues are identified, analyzed, and addressed.

In many states, the transportation planning 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.

Current and Future Issues

Statewide multimodal planning has evolved to reflect the emerging issues noted earlier. There is far less focus on facility planning now than was the case in the past. The focus instead is on policy issues, system management and preservation, system operations, system performance, customer needs, financing, and fiscal constraints. There also is increased emphasis on transportation's role in achieving such societal goals as efficiency, equity, a sound environment, livability, and a good overall economy.

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 those 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 are also expected to measure progress toward goals that are not directly linked to but are influenced by the transportation system.

Although simple in concept, the implementation of this kind of performance-based planning has proved more difficult than expected. A major challenge lies in developing objective measures that are not mode-specific, and that use readily and regularly available data. Questions have been raised about the appropriateness of developing performance measures—and performance standards—for goals 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. These new customer roles have changed the methods employed to involve the public; the nature of the issues identified; and the tools used to analyze and present the plans, as well as the transportation solutions developed.

Planners must ensure that all interests—particularly those of minority and low-income populations, which historically have been underrepresented—are equitably involved in the planning process. 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

As suggested earlier, the post-ISTEA era brought a major shift in focus at both the federal and state levels from planning and building the transportation system to managing, operating, maintaining, and preserving the system. The role of planning 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 in developing and maintaining databases and conducting analyses.

The potential for using congestion management systems and intermodal management systems as tools in statewide planning has yet to be realized. As intelligent transportation systems evolve, it will be critical for decisions about technology deployment to be made in conjunction with statewide and metropolitan plans. Moreover, the benefits and costs of these systems and the way they compare with alternative transportation investments need to be better understood. Planning must extend to encompass not only long-term needs and facility investments, but also current operating needs, as well as the immediate and long-term trade-offs involved.

Financial and Programming Considerations

ISTEA required that long-range plans developed in metropolitan areas reflect 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 resulted in a greater sense of what can actually be accomplished during the life of a plan. In sever-

al instances, sensitivity to these constraints has helped focus planning discussions on needed revenues, as well as on innovative financing alternatives that can address the long-term needs identified in the planning process.

Although linking transportation plans directly to the statewide transportation improvement program is becoming the rule rather than the exception, it is still not universal practice. There is some concern as well that an emphasis on financial constraints could inhibit visionary planning, or become an excuse for not pursuing additional 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 to address such concerns.

Multimodal and Intermodal Planning

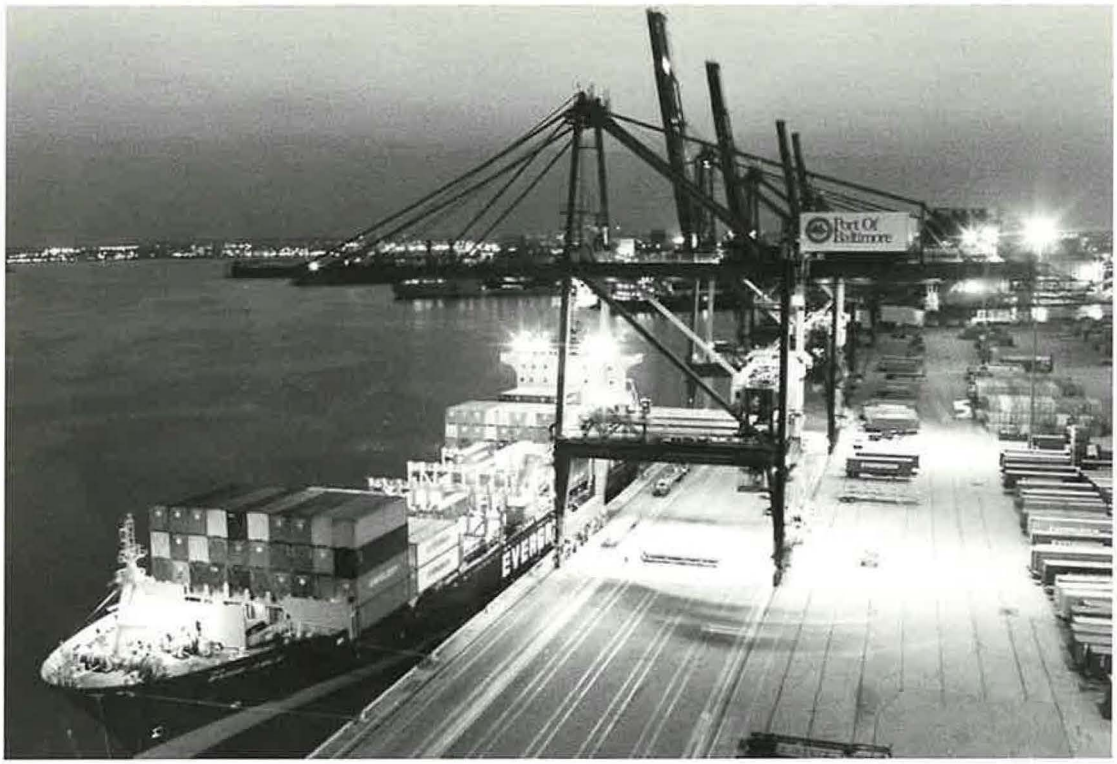
An intent of both ISTEA and TEA-21 was that the federal government, states, and metropolitan areas develop solutions to transportation needs without a modal bias, using the full range of multimodal and intermodal alternatives available. Yet analysis tools and performance measures needed to support mode-neutral and multimodal evaluations are woefully inadequate. Planning still takes place mainly at the modal level, and statewide plans are often a compilation of modal plans instead of a set 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 among different agencies at the modal level. State departments of transportation find it difficult to plan and make recommendations for modes not under their control. Successful examples of multimodal and intermodal planning need to be documented and evaluated, with particular attention to ways in which institutional issues can be addressed successfully. Technical tools to support mode-neutral and multimodal evaluations also need to be developed.

Goods Movement Planning

Since the passage of ISTEA, goods movement planning has received increased attention in the statewide planning process. Better data for such planning have become available through the Bureau of Transportation Statistics and other sources, and increased staff resources have been devoted to these planning efforts. Access to major intermodal transfer facilities, such as airports, ports, and rail terminals, has been a focus of many of these efforts, particularly with regard to the intermodal connectors for the National Highway System.

Significant changes are occurring in the economic phenomena that affect goods movement, such as the globalization of the economy; free

Statewide planning will increasingly involve consideration of intermodal issues in the 21st century.



Major changes in the world economy, as well as within the goods movement industry, pose challenges to statewide planning.

trade; just-in-time delivery; and tremendous increases in high-value, low-weight freight. At the same time, major changes occurring in the freight transport industry—such as consolidation of the port business into a limited number of superports serving substantially larger ships, mergers among railroads, and increasing percentages of goods transported by container—have dramatic implications for freight demand.

These changes will affect statewide planning in ways that as yet cannot be fully understood. States continue to grapple with the appropriate role for state government in transportation services provided primarily by the private sector. All states face challenges as well in trying to develop public–private partnerships in goods movement to optimize economic efficiency. Moreover, as a result of the changes in demand noted above, capacity constraints in the goods movement system can be expected to become a major issue in statewide planning. If future goods movement requirements are to be accommodated, further research into the implications of these changes will be necessary. Additional documentation must also be developed for the institutional arrangements that can best support freight interests.

New Technology

Rapid developments in technology will change statewide transportation planning during the next few decades in ways we can only imagine. Technology will make available new data and information to support the transportation planning process. An enhanced ability to store, process, and analyze data and information will make it possible to answer questions that previously had to be left unanswered or answered subjectively.

Technology will also change the nature of trips made and not made. Trips made today may not be necessary in the future as a result of advances in telecommunications and the greater prevalence of telecommuting, teleconferencing, and teleretailing. ITS will be used more extensively. In addition, technology will reduce some of the costs and effects of transportation through improved emission controls, more fuel-efficient vehicles, and safer vehicles. The impacts of these changes on statewide transportation systems are not well understood. These impacts in both the near and long terms need to be better addressed by statewide planning processes.

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 have usually 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 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.

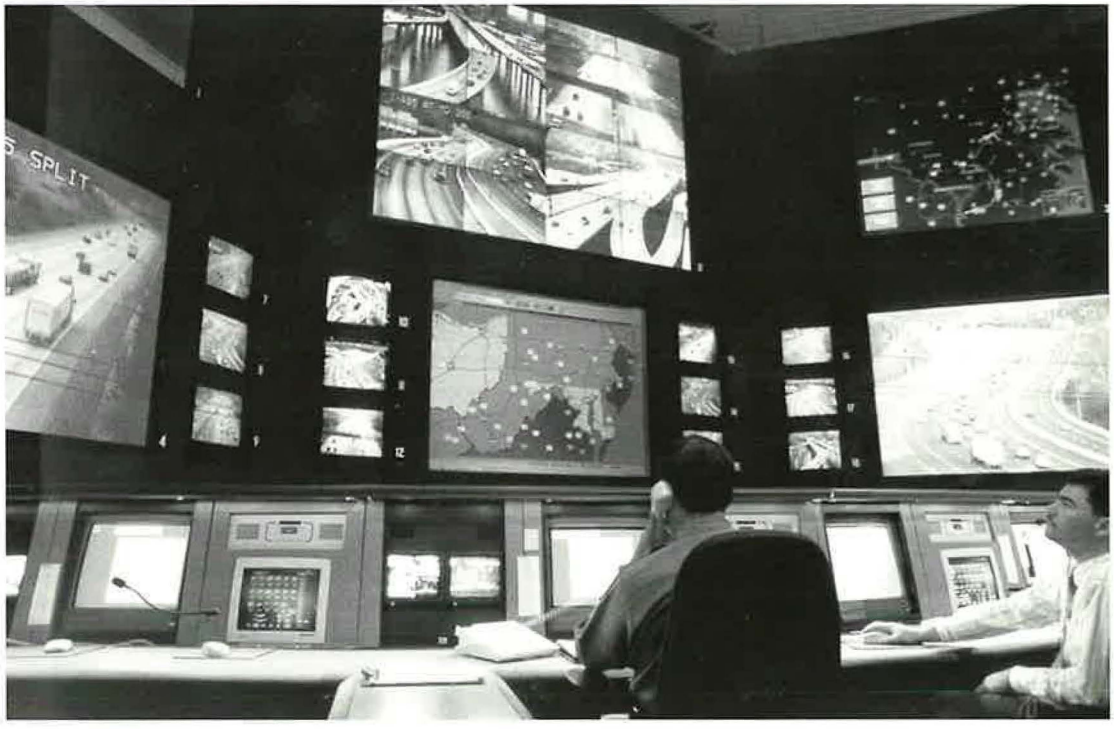
Only a few states have enacted growth management legislation. However, as sprawl continues to cause travel growth in excess of population growth, the relationship between land use and transportation will become a key issue in statewide planning. Planners can learn from states that have begun to consider 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 transportation should be a tool of social, environmental, and land use policy will continue to characterize statewide planning for many years.

Equity

Related to the consideration of natural environmental systems is consideration of how the effects and benefits of transportation decisions and investments are distributed among various socioeconomic groups. The impacts of statewide transportation decisions on minority and low-income populations will become an increasingly important concern. Issues related to welfare-to-work and access to jobs 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 transportation investments between rural and urban areas, as well as the role of rural elected officials in decision making about those investments. Lessons learned in resolving these issues must be shared, and effective tools for quantifying the effects of policy decisions must be developed.

Relationship 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 planning processes. Such coordination and collaboration can be effective only if they include mechanisms for achieving 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.



Statewide transportation planning will involve increased focus on management and operation of the system.

Technical Issues

As the policy issues addressed in statewide transportation planning have changed, the associated technical tools have not kept pace. Important technical areas for future attention include the effective use of national and ITS databases, filling in of critical data gaps, development of models that can be used to analyze multimodal alternatives and multimodal investment strategies, support for perfomance-based planning efforts, coordination of statewide and regional analyses, forecasting for modes that have not yet been introduced in a state (such as maglev or high-speed rail), understanding of changes in the economy and the goods movement industry, and the development of simplified policy-oriented analysis tools. Progress in many of these areas will 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 will facilitate the analysis and display of the results of statewide planning. A commitment to developing, documenting, and training professional staffs in these methods will be needed.

Process Reengineering

Several states have recognized the need to reengineer their statewide transportation planning processes. Given the magnitude and rapid rate of change in statewide planning, such reengineering efforts are likely to become increasingly widespread. The lessons learned from these efforts will need to be shared so each state will not have to reinvent the wheel in its process reengineering.

Staffing

Issues involved in statewide transportation planning have become increasingly complex, and the tools used to analyze these issues require greater and more varied technical competency. At the same time, most state departments of transportation have decreased the size of their staff, and many experienced professionals have retired. A major challenge in the new millennium will be to recruit, train, develop, and retain qualified professional staff for state departments of transportation.

Conclusion

The 50 states vary tremendously with regard to the issues and challenges they face in transportation planning at the state level. Each state has developed a process that best suits its form of governance and the issues it faces. The diversity of approaches to transportation planning at the state level offers opportunities for states to learn from one another by sharing the results and lessons learned from this experimentation.

Contributed by the Committee on Statewide Multimodal Transportation Planning (A1D01), Neil J. Pedersen, Chair.

Websites Related to Multimodal Planning

Arizona Department of Transportation's Transportation Planning Division:
map.azfms.com

Federal Highway Administration's Intermodal and Statewide Programs:
www.fhwa.dot.gov/hep10/

Colorado Department of Transportation's Business Site:
www.dot.state.co.us/business/

Montana Department of Transportation:
www.mdt.state.mt.us

Oregon Department of Transportation:
www.odot.state.or.us/tdb/index.htm

Florida Department of Transportation's Planning Pages:
www.dot.state.fl.us/planning/

Minnesota Department of Transportation's Office of Investment Management:
www.oim.dot.state.mn.us/

Alaska Department of Transportation and Public Facilities:
www.dot.state.ak.us/