

## **Integrating Overlapping Issues and Maintaining Continuity**

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The area of transportation programming, planning, and systems evaluation broadly covers the activities of about 17 Transportation Research Board (TRB) committees, with considerable overlap in interests and issues. The Committee on Transportation Programming, Planning, and Systems Evaluation serves to integrate these overlapping areas. Although such integration is the committee's primary purpose, the challenge is to stay on course and to stay focused on overarching issues, problems, and methodologies.

### **STATE OF THE PRACTICE**

It is not easy to clearly define a state of the practice for a topic as broad as transportation programming, planning, and systems evaluation. In fact, a simple enumeration and review of those committees with overlapping interests (and with which AID06 has, for example, cooperated on joint sessions and workshops in past years) is a quick way to suggest a breadth of interest that defies precisely defining the state of the practice. Such an enumeration would illustrate the wide range of subject matter of valid interest to transportation programmers and planners, thereby making clear the need to step back and consider the bigger picture.

### **Programming**

In the area of programming, there has been considerable interaction with three other committees with common interests—Transportation Economics, Strategic Management, and Taxation and Finance—to address issues of the temporal relationships between available transportation funding resources and

- The means by which those resources are generated;
- The staged implementation of transportation capital improvement projects;
- The relationship of those projects to evolving geographic and temporal shifts in travel demand;
- Broader management issues associated with how transportation serves other social, economic, and environmental objectives; and
- Related programming concerns.

To maintain relevance to the reorganized and refocused approach to transportation investment/management authorized by the Transportation Equity Act for the 21st Century (TEA-21), the committee is now poised to spend more time and effort on programming-

related topics. The committee's intention is to bring greater understanding of how the time-phased implementation of transportation improvements relates to the corresponding time-phased achievement of broader social, economic, and environmental objectives.

### **Planning**

The Committee on Transportation Programming, Planning, and Systems Evaluation has overlapping interests with at least eight other TRB planning committees. In fact, bringing a broader, more comprehensive approach to these areas of overlap was one of the initial purposes for the committee's establishment. The diversity of these concerns makes it no small feat to be comprehensive and systematic in covering both the urban and nonurban aspects of each of these topics. The current state of the art of A1D06 has been to try to keep up with the more specific methodologies and processes addressed by each of these other committees and to try to maintain "big picture" continuity.

### **Systems Evaluation**

Systems evaluation is at once both the most difficult and the most "owned" of any of the subject areas shared with other committees. Being systematic in evaluating transportation service and investment alternatives means that a wide range of overlapping concerns, impacts, and consequences should, to the extent possible, be addressed in some sort of comprehensive framework. The many ways to define and analyze such frameworks could be said to have been the focus of the committee's state of the art over the last few years. There has been no one "right" way for systematic evaluation, a situation likely to persist into the future.

## **FUTURE EXPECTATIONS**

As we enter the 21st century, members of the Committee on Transportation Programming, Planning, and Systems Evaluation look forward to a major shift in emphasis. Programming issues and concerns should increase in importance relative to planning issues and concerns, while systems evaluation should remain the cornerstone of the committee's interest.

In fact, the Performance Measures Subcommittee, co-sponsored by the Committees on Programming, Planning, and Systems Evaluations, Statewide Multimodal Planning, and Strategic Management, provides a kind of symbolic point of departure for the 21st century, in terms of shifting priorities in committee interest. It has been known for some time that effective performance measures provide a foundation for improving the systematic evaluation of transportation plan and program alternatives. However, the identification of meaningful measures, and their consistent generation on an ongoing basis, with continuity in use by the ever-changing set of policy and technical participants in transportation decision making, has been extremely difficult. A slow-moving process of incremental improvement has been the result, with continuing efforts anticipated well into the next century.

As we enter the new millennium, the issues that will likely continue to dominate the broad area of programming, planning, and systems evaluation are listed below:

### **Systems Evaluation**

#### *Prioritization Techniques*

In a multiyear, multiproject, multigoal transportation improvement programming context, how can our methodologies for setting priorities be improved? What measures of impact or

goal achievement are workable? What can we learn from the good and bad experiences of other agencies that have tried to make progress?

#### *Data Development*

In the context of improving the information available for evaluating alternatives, how can better data be generated? What is the role of geographic information systems (GIS)? How can the impacts upon nonusers of the transportation system be better measured, in both the short and long run? What is the role of improved customer satisfaction measurement techniques? How can the burgeoning capabilities of the Internet be best employed to bring the experiences of other cities and regions to bear upon a candidate region?

#### *Credibility and Accountability of Decision Making*

This concept follows from improving the data available for making decisions. What is the role of back-casting analyses of actual versus forecasted impacts of transportation improvement programs undertaken 10 or 20 years ago? How can monitoring of actual impacts, year-to-year, be used to adjust the rate of system investment? Should it be? How can the technical side of effective decision making be better matched with the political side?

#### *Equity in Resource Allocation*

How can we improve our assessment of fairness where competing demands for financial resources exceed the availability of those resources, especially at the state level, but also within any other geographic context? What measures of impact equity should or can be used? Should it be done on a modal basis, geographic basis, transit dependency basis, in terms of mobility concerns, or in terms of access to opportunities?

#### *Economics and Economic Development Benefits*

How can both short-term and projected long-term economic impacts be reflected in program evaluation criteria? How can the complex arena of economic benefits analysis be made meaningful to elected officials and the general public? How can economic impacts be made believable?

#### *Post-Program and Post-Project Evaluations*

Who is responsible for assessing whether promised benefits are actually achieved? How important is this to the ongoing transportation planning/programming process? What kinds of measures make the most sense?

#### *Economic Evaluation Using Travel Model Outputs*

Considerable effort has been devoted in the last decade to improving computerized travel forecasting models, including improvements in the data upon which those models are based. How can the results of these models be converted into more meaningful criteria for evaluating investment alternatives, including social, economic, and environmental impacts?

#### *GIS Applications in Programming*

GIS data capabilities offer a new level of detail for analyzing quickly the projected consequences of transportation alternatives. The potential to become overwhelmed by huge masses of data also is looming. What are the best ways to use GIS data to clarify the

potential impacts among transportation alternatives? How should this information be summarized? Who should be involved?

#### *Benefit/Cost Analysis of Intelligent Transportation Systems (ITS) Deployment*

As ITS and their components become viable as important transportation investment options, how should their benefits and costs be evaluated? Should new measures of impacts and costs be generated? If so, how and why? How can these options be reasonably integrated with conventional ones?

### **Programming**

#### *Capital Programming Implications of TEA-21*

Multimodal programming, and tradeoffs in impacts between different modes, must be handled more carefully. How is this to be accomplished? What are the best measures to accomplish this? What impact time frames make the most sense?

#### *Optimization of Financial Resources*

Given the complexities of different time streams of both costs and impacts for multimodal transportation alternatives, how can our programming methodologies be improved to move closer toward optimization of resource use? What can be learned from the experiences of other regions that have attempted methodological advances? What can be learned from the academic community?

#### *State-Level Resource Allocation Systems*

Most state departments of transportation use some form of systematic methodology to allocate financial resources, both between modes and among counties or other subareas. How can these allocation methods be improved? Who should be responsible? What is the role of the research community in effectively linking with political decision makers?

#### *State-Level Programming Reform*

A current hot topic, which is related to the State Transportation Improvement Program (STIP), involves focusing on methodological upgrades. This includes using improved impact measures as well as methodologies for comparing alternative investments. What is the best way to improve communications between elected officials, senior departmental administrators, mid-level managers concerned with doing a better job, and younger staff members most versed in the major improvements in measures in methodologies that have been emerging in recent years? Who can learn what from whom, in terms of those states attempting to make real progress, and how?

#### *Future Role of ISTEA Management Systems*

TEA-21 leaves the door open for the continuation of promising improvements in several types of transportation management systems initiated under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). However, these systems are no longer mandatory. Should some or all of them be revived? Should they be revised to be more relevant to changing decision requirements? Will increased emphasis on effective programming of transportation investments bring them back?

*Technology Innovation in Programming*

In general, improvements in personal computer spreadsheet capabilities, GIS and related data availability and flexibility, and increased levels of detail in considering transportation project/program impacts, all suggest a need for methodology improvement in the programming process. Is there a “new technology” role here? How can/should it be marshaled? How can potentially more complex methodologies be made meaningful (and trustworthy) to ultimate political decision makers?

*Asset Management versus Glitzy Project Development*

How can the movement toward more mundane and reliable day-to-day program management, based on better data on costs and impacts, be reconciled with the regular need of elected officials to take credit for major transportation improvements? In other words, how can innovative but sometimes risky transportation improvements, whose potential benefits are not fully understood, be matched against, or integrated with, a well-developed, time-phased transportation capital program that essentially involves effective (but dull) ongoing management of conventional assets? How should creative transportation investments be incorporated?

*Planning*

Multimodal/Intermodal Considerations. Making systematic and meaningful tradeoffs between modal options that are measured in different ways and that meet distinctly different travel demands has always been a thorny proposition, even at intermodal transfer points. How can our slow but steady improvement in acknowledging these analysis difficulties be maintained? How can prioritization techniques at this level be improved, particularly in terms of allocating scarce financial resources? These issues begin at the conceptual planning level and continue into project programming.

*Congestion Pricing*

Progress in real-world implementation of congestion pricing, which is designed to redistribute the temporal and/or geographic location of peak travel demand, is expected to continue and, perhaps, accelerate. As such options become viable for inclusion in broader transportation programming processing, how can they be reflected in the design of transportation improvement options? How can pricing be made a viable dimension of those options?

*Factoring ITS Into Plan/Program Alternatives*

Many expect that ITS options will soon become viable alternatives within specific corridors, and, eventually, entire urban transportation systems. How can such options be integrated within conventional sets of transportation modal alternatives? How can costs, uncertainties, liabilities, and benefits be equitably measured? How should the allocation of costs and benefits be addressed?

*Integration of Planning and Programming*

This topic has concerned the transportation community for at least the past 50 years, and there is still room for improvement. As all these issues are addressed in the coming years, the interplay between broader planning and time-specific programming will continue to

require attention, to ensure implementation of only the best transportation improvement projects. How can this best be accomplished?

The Committee on Transportation Programming, Planning, and Systems Evaluation has a full slate of issues to consider as we enter the 21st century. As we strive to partner with other committees to find solutions for these problems, we need to continually remind ourselves that the beneficiaries of our work should be transportation practitioners at the state and local level.