

TRANSPORTATION RESEARCH
CIRCULAR

Number E-C062

February 2004

Addressing Fiscal Constraint and
Congestion Issues in State
Transportation Planning

July 14–16, 2002
Wood's Hole, Massachusetts

TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

Addressing Fiscal Constraint and Congestion Issues in State Transportation Planning

July 14–16, 2002
Wood's Hole, Massachusetts

Sponsored by

STATEWIDE MULTIMODAL TRANSPORTATION PLANNING PEER EXCHANGE [ADA10 (A1D01)]

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Introduction

For several years, the Transportation Research Board Committee on Statewide Multimodal Transportation Planning Peer Exchange (A1D01) has sponsored an annual peer exchange with the support of the Federal Highway Administration (FHWA). The exchange creates an informal setting in which committee members who are state transportation planners and other invited guests can share current issues and approaches to the development and implementation of state transportation plans (STPs). The purpose of the meeting is to advance the practice of statewide transportation planning by direct sharing of innovative approaches and to generate ideas for needed research.

The 2002 peer exchange program was organized into three distinct parts. First, on the eve of the peer exchange participants shared the main issues facing their statewide transportation planning program in a casual discussion format. The conversation set a tone of openness and frankness that continued throughout the peer exchange.

The second segment of the peer exchange was a discussion of fiscal constraint and financial planning issues. Each state department of transportation (DOT) representative was asked to answer the following set of questions prior to coming to the peer exchange:

- How do you address financial planning in your statewide planning process?
- How does your statewide plan document financial planning issues?
- How do you demonstrate fiscal constraint in your State Transportation Improvement Plan (STIP)?
 - How does the current fiscal/economic environment play into your long-range statewide planning and programming process(es)?
 - What, if any, performance measures that you may use have a financial basis?

At the exchange, FHWA staff led a discussion of the fiscal constraint and planning issues covered by the five questions and the additional topics raised by state DOT representatives.

The third part of the meeting focused on how congestion is addressed in STPs. An additional set of questions regarding congestion were answered by each state DOT representative before arriving at the peer exchange.

1. How does your statewide plan address congestion?
2. What performance measures are used to describe the congestion problem and the effect of congestion-related projects?
3. How does your plan address funding and implementing congestion-related projects?
4. What is the relationship between capital and operations approaches to congestion in your plan?
5. What intergovernmental relations issues are you facing related to congestion?
[city/suburb; urban/rural; state/metropolitan planning organization (MPO), etc.]
6. What land use issues do you face related to congestion plans?

The discussion began with five targeted presentations by participants on various congestion related issues. Following each presentation, the group shared similarities and differences to their own state's experience. The answers to the six congestion questions provided

necessary background and information regarding current congestion related activities in state DOTs. The discussion concluded with the identification of prevailing themes and research ideas to address congestion in statewide transportation plans.

Patricia Hendren prepared this report based on the discussion and material prepared for the meeting. The report has been reviewed by several peer exchange participants. The report documents the three segments of the 2002 Statewide Multimodal Transportation Planning Peer Exchange. The key issues facing state transportation planning raised during the informal discussion are summarized in the section on Identification of Key Issues Facing Statewide Transportation Planning. The identified themes are generalized and do not contain state-specific examples to maintain the casual atmosphere of the conversation. However, Maryland and Florida DOTs submitted a written list of key issues, which is also included. The section on Domestic Scan of Fiscal Constraint and Financial Planning Issues presents state DOT answers to fiscal constraint and financial planning questions, a summary of the written responses and a description of additional items raised during the discussion. The state answers to the questions related to congestion are contained in the section on Addressing Congestion in State Transportation Plans as well as a summary of the written responses, synopsis of the five presentations, recapitulation of the discussion, and identified conclusion and research items. Finally, the Appendices contain a list of participants and supporting documents.

Identification of Key Issues Facing Statewide Transportation Planning

SUMMARY

The peer exchange started with an informal discussion of the main issues facing state transportation planning. The following section describes three common themes that were raised.

POLITICS AND TRANSPORTATION PLANNING

Transportation planning must exist in the push-pull environment of politics. The support of top elected officials can help propel an important project forward. For example, a political leader can generate support for a capital-intensive project that has negative short-term impacts by focusing discussions and media coverage on the project's long-term benefits. However, politicians may support a less productive project simply because it is newsworthy while a more controversial yet very effective project may be pulled back. The influence of politics on transportation planning is intensified during a re-election year. The areas of the state targeted for funds to address congestion are also typically politically motivated. To fulfill environmental regulations and demonstrate projects are properly prepared, advance funding is required. Elected officials are more hesitant to provide upfront revenue for projects that will be implemented long after their term. Managing and planning projects in this environment creates additional challenges to the transportation field.

FINANCIAL CHALLENGES

The current economic climate has created more uncertainty in revenue availability for state DOTs. For example, in some states forecasted surpluses in the general funds were to be allocated to transportation projects, but instead state governments are facing revenue shortfalls. The present economy has also made it more difficult to obtain bonds to support large projects. A few states are investigating the option of buying out federal aid on local and rural areas that are too small for MPOs. The benefit to local governments is state funds typically have less restrictions than federal dollars.

Participants briefly discussed the option of increasing state gas taxes. The general opinion is the typical consumer does not distinguish between two stations with a 5- to 6-cent price difference, suggesting there is room for a tax increase. The failure to pass a gas tax through the legislature has led transportation spending proponents to place gas tax initiatives on voter ballots. However, it is unclear if the public would realize the full impact of not passing a particular ballot. In addition, the current economic downturn makes both politicians and citizens even more unlikely to support such a tax. A few states are evaluating the discrepancy between diesel and gas tax levels to decide if the gap between the two fuels should be closed.

MEGA PROJECTS

The scale and capital requirements of state transportation projects are increasing. For example, multiple freeways segments built in the 1950s have been resurfaced multiple times necessitating reconstruction to prevent road failure in the near future. As our transportation system continues to age, the need for large projects or “mega projects” will increase. Several states described current and future mega projects and the unique challenges these projects generate.

Mega projects are revenue intensive and require a large percentage of the capital outlay budget decreasing available funding for other state transportation needs. Therefore, it is essential to demonstrate to the public why the mega-project benefits the state as a whole. Extra attention is also given to large projects resulting in contractor hesitation to submit bids or higher bid submittals to offset the greater risk to the contractor. The FHWA also has special requirements for projects with a greater than \$1 billion-budget. However, the exact nature of these special requirements remains unclear. Due to these challenges, some state DOTs have separated a mega project into several smaller projects.

STATE RESPONSES

Maryland and Florida also submitted the following documentation of the main issues their state is facing:

Maryland

- Funding constraints:
 - Estimated \$27 billion in unmet needs over the next 20 years;
 - Traditional transportation funding sources cannot produce sufficient revenue to meet the transportation needs of the next 20 years.
- Multimodal needs with limited resources:
 - Promoting Port of Baltimore niche markets;
 - Need for public–private partnering;
 - Development of key multimodal corridors;
 - Security/safety assurances.
- Role of private freight industry:
 - Assumption of state owned rail right-of-way (ROW) by local short lines;
 - Funding of infrastructure improvements on Class I rail lines;
 - Continued development of intelligent transportation systems (ITS) for commercial vehicle operations.
- Reduce congestion:
 - Slow the rise in vehicle miles traveled (VMT) per capita;
 - Reversing the decline in high-occupancy vehicle (HOV), bicycling, and walking;
 - In the long term, limiting the congestion increase through planned investments.

Florida

- Trying to get a better handle on safety cause and effect.
 - Improving current safety-related activities on highways and expanding efforts to other modes.
 - Need to develop a better understanding relating to the strategies we are implementing and the results we see in the safety numbers. We need to ultimately be able to tell folks in the department and in the districts what they need to be doing to impact the safety figures.
 - Improving measures relating to bicycle and pedestrian safety, including development of inventory-based and level-of-service (LOS) measures.
 - Need a continued emphasis on highway and intermodal safety.
- Operational improvements to the system:
 - System reliability.
 - Developing measures that quantitatively show the benefit of implementing ITS technologies. Specifically, developing measures relating to implementation of ITS technologies.
- Continue to improve mobility measures.
 - Develop measures for mobility in nonurban areas. (Current mobility measures have an urban bias.)
- Develop measures for quality of life and how the transportation system impacts it.
- Development of a strategic intermodal system.
 - Developing and maintaining a balanced multimodal system that addresses current and future passenger and freight movements.
 - Maximizing the use of existing and future capacity across all modes and facilities.
- Developing a macroeconomic analysis tool of the linkages between transportation investments and economic performance.
- Other continuing issues:
 - Congestion/mobility. Florida is growing rapidly. The amount of delay experienced by drivers on the Florida Intrastate Highway System (FIHS) continues to worsen and is not projected to get any better. Nearly 70% (about \$20 billion) of the improvements needed to the FIHS by 2010 are unfunded.
 - Designation of MPOs following the 2000 Census.
 - Environmental issues/permitting efficient transportation decision making.
 - ROW costs. The increasing costs of acquiring land for transportation projects. Also, the difficulty in projecting actual costs.
 - Air quality standards—Florida has a rural area that is about to become a maintenance area.
 - Workforce reduction. The department is in the process of implementing a 5-year workforce reduction plan where the department’s workforce will be reduced by about 27%.
 - Dealing with the downturn in funds available for projects.

Fiscal Constraint and Financial Planning Issues

INTRODUCTION

Jill Hochman and Lorrie Lau introduced issues surrounding fiscal constraint and financial planning. The Statewide Multimodal Transportation Planning Peer Exchange provided an ideal place to gather information on the fiscal constraint and financial planning issues facing state DOTs. Each state DOT representative was asked to answer the following questions prior to attending the peer exchange:

1. How do you address financial planning in your statewide planning process?
2. How does your statewide plan document financial planning issues?
3. How do you demonstrate fiscal constraint in your STIP?
4. How does the current fiscal/economic environment play into your long-range statewide planning and programming process(es)?
5. What, if any, performance measures that you may use have a financial basis?

STATE RESPONSES

Alaska

How Do You Address Financial Planning in Your Statewide Planning Process?

We do an investment analysis as part of our statewide plan. It is essentially a broad, multimodal needs analysis that compares the need to available resources. The analysis examines in some detail fuel tax revenues, deferred maintenance and preventive maintenance, develops principles for a sound revenue generation system and evaluates the current Alaska system against these principles. Obviously the focus is on operations and maintenance funding rather than project capital funding, as our significant current financial shortcomings are in these areas.

How Does Your Statewide Plan Document Financial Planning Issues?

The primary documentation is the investment analysis, a subsection of the statewide plan.

How Do You Demonstrate Fiscal Constraint in Your STIP?

To constrain fiscally the STIP, we

1. Estimate the amount of apportionment we will expect to receive in the future based on Transportation Equity Act for the 21st Century (TEA-21), Revenue Aligned Budget Authority (RABA) forecasts, and what we have received in the past.
2. Set targets for our programs in such a fashion that the total yearly amount of the targets is very close to the total money we expect to be apportioned.

3. Schedule projects for funding such that the total yearly funding is very close to the target amounts.

4. Adjust the funding source of individual projects so that the total amount of money we expect to use of each individual apportionment [e.g., STIP, Integrity Management, National Highway System (NHS), Congestion Mitigation and Air Quality (CMAQ), etc.] is within the estimate of what we expect to receive of each individual apportionment.

How Does the Current Fiscal/Economic Environment Play into Your Long-Range Statewide Planning and Programming Process(es)?

The current fiscal/economic environment does not play a particularly important role. Our long-range planning attempts to forecast future economic conditions, population, and other parameters that will affect demand for transportation.

What, If Any, Performance Measures That You May Use Have a Financial Basis?

We are expected to obligate all available federal funding each fiscal year.

California

How Do You Address Financial Planning in Your Statewide Planning Process?

1. All transportation plans and programs in California should be financially constrained.
2. Financial planning is a major component of and drives the transportation planning process in California.
3. The California Transportation Commission (Commission) adopts a STIP fund estimate biannually that forecasts fund availability for programming each STIP (a multiyear program).
4. The STIP fund estimate recognizes local funds and other resources to augment federal funds.
5. The STIP includes regional transportation improvement programs (RTIP) and the state interregional transportation improvement program (ITIP), and it identifies expenditure limits for each transportation agency. (The department programs interregional projects in the ITIP while the 43 regional transportation planning agencies in the state program regional projects in their RTIPs).
6. The RTIP and ITIP are based on approved regional and state plans and primarily address street and highway, rail, and transit projects.

How Does Your Statewide Plan Document Financial Planning Issues?

1. The draft California Transportation Plan (CTP) is a policy plan that advocates the flexibility of transportation revenue expenditures. Flexibility will allow jurisdictions to consider multimodal solutions for transportation challenges.
2. Among issues addressed are public-private partnerships, voter thresholds, and federal reauthorization as well as more typical issues such as funding availability for operations, maintenance, and goods movement.

3. Once approved, the final CTP will serve as a guide for long-range transportation planning in the state by the department and other transportation entities.

How Do You Demonstrate Fiscal Constraint in Your STIP?

1. The STIP is limited to projects nominated in the RTIPs and the ITIP.
2. The STIP programs funds only up to the limits identified in the fund estimate.

How Does the Current Fiscal/Economic Environment Play into Your Long-Range Statewide Planning and Programming Process(es)?

1. The fiscal/economic environment is a consideration in the planning and programming process, which, fortunately, is iterative.
2. The current environment has not affected the preparation of the draft CTP, but it may affect implementation.

What, If Any, Performance Measures That You May Use Have a Financial Basis?

1. Cost-effectiveness is that performance measure which has a direct financial basis. We apply it at the project level and are investigating using it to evaluate alternatives.

Florida

General Information

There are many federal, state, and local revenue sources:

- Federal taxes and fees that fund the federal highways program;
- State taxes and fees that fund the state program managed by Florida DOT;
- State taxes and fees (the 4-cent county–municipal gas tax and local option gas taxes) that go to local governments to fund their programs;
- Local taxes and fees (impact fees, property taxes, optional sales taxes, local bonds, etc.) that fund local programs and provide matching funds when needed for specific federal and state projects; and
- Federal taxes and fees that fund federal aviation, transit, and rail programs. (Almost all of these funds go directly to local governments or agencies, not to the state.)

Federal funds are used for the highways program, state funds for state transportation projects and services, and local funds for local transportation programs and to match specific federal and state projects. Federal and state funds are deposited in the State Transportation Trust Fund and are reflected in the department's plans through the Florida Transportation Plan (FTP), program and resource plan, and work program.

Funds for local transportation programs are distributed either directly to local governments and agencies, or into a number of trust funds. Local governments and agencies use these funds

through their local budget process and through their capital improvements element of their comprehensive plan (typically, these cover 1 to 5 years).

The department's work program for the highway program in the state of Florida is required to be balanced to the State Transportation Trust Fund. As revenues and revenue forecasts change, so does the work program.

The following links to the department's Revenue Forecast Handbook: www11.myflorida.com/planning/policy/pdfs/RevHandbk.pdf (pdf file).

The following links to a document that provides a brief overview of Florida's transportation tax sources: ombnet.dot.state.fl.us/financialplanningoffice/Tax%20Primer%20JAN-2002%20Update%20REC%20061402.pdf (pdf file; .6 MB).

How Do You Address Financial Planning in Your Statewide Planning Process?

Finance planning in Florida is comprised of two components: forecasting transportation revenues and planning the use of these funds. The department operates primarily from dedicated sources of funds. Forecasts are made of expected revenues from these sources and a finance plan is developed. The 10-year finance plan takes into account expected levels of expenditures, expected levels of federal aid, expected state revenues, and the resulting expected cash balance in the State Transportation Trust Fund. The department's 5-year work program and 10-year program and resource plan must be balanced to the forecasted revenues. For the department's long-range transportation plans (i.e., FTP and modal plans, such as the FIHS 2025 plan), the revenue forecast in the 10-year finance plan is extrapolated out for another 10 to 15 years using forecasted growth rate factors for federal and state funds.

Regarding planning the use of funds, Florida law requires that the department's programs be driven by policies and by program objectives. These are outlined in the FTP. The division of forecast revenues between programs, in a manner that will lead to accomplishment of these policies and objectives, is accomplished through the 10-year program and resource plan, which is updated annually. Florida law also requires that the department's 5-year work program be balanced to available funds and to the objectives set forth in the FTP and program and resource plan.

The following links to a document that provides a brief overview of the financial planning process in Florida: www11.myflorida.com/programdevelopmentoffice/process.pdf (pdf file; 189 KB).

How Does Your Statewide Plan Document Financial Planning Issues?

Florida's financial planning issues may be documented in a variety of documents, including the FTP, program and resource plan, modal plans, and related studies prepared by the department. As part of developing the program and resource plan, financial planning issues are annually reviewed and analyzed by department executive management. Any resulting policy changes are then reflected in the program and resource plan and work program.

The following links to Florida DOT's program and resource plan: www11.myflorida.com/programdevelopmentoffice/Program%20and%20Resource%20Plan%20Document.htm.

How Do You Demonstrate Fiscal Constraint in Your STIP?

Florida's STIP comprises the federally funded subset of the Florida DOT 5-year work program. It is essentially the collective "roll-up" of the STIP for each of Florida's 25 MPOs plus federally funded rural projects. The work program contains the specific transportation projects and services to be undertaken during each of the next 5 fiscal years. The number of eligible projects to enter the work program is determined by estimates of available funding obtained from the state revenue estimating conferences and the federal revenue forecasts. Florida DOT then matches funding to specific projects, which are then scheduled or programmed.

The first step in the process of developing the work program is the allocation of funds to various programs and geographic districts. This process follows the policies and goals contained in the FTP and includes consideration of relevant federal and state laws governing the use of transportation funds. This results in fund allocations within broad program areas such as the FIHS, bridges, resurfacing, routine maintenance, public transit, airports, and many others that form the Florida DOT program and resource plan. The program and resource plan contains commitment authority that funds the full amount of a transportation project, even if that project will be constructed over multiple years with cash disbursements stretching well beyond the first year of the annual state budget.

The program and resource plan commitment authority is matched against estimated revenues expected to be received over future years through a shorter-term cash forecast (month-by-month forecast of cash receipts and disbursements) that measure cash needs over 3 to 5 years and a finance plan (annual forecast of cash receipts and disbursements) that measures cash needs over 5 and 10 years. This ensures the department's allocation of transportation dollars can be fully funded by current and future transportation revenues. Financial feasibility is demonstrated through Florida DOT's tentative work program.

It should be noted that the department's STIP is a live document. Adjustments are continually made to the work program and the STIP. The work program and STIP are fiscally constrained to the revenue forecasts. That is, adjustments are continually being made on expenditures based on cash forecasts.

How Does the Current Fiscal/Economic Environment Play into Your Long-Range Statewide Planning and Programming Process(es)?

Statewide planning and programming decisions are based on the department's policies and objectives. To establish the policy direction for the department many factors are considered, including: trends and conditions information relating to transportation and economic conditions; program performance information; and feedback from our customers. The policy direction is documented in the short-range component of the 2020 FTP.

The work program instructions are developed consistent with the short-range component. Additionally, the work program is balanced to anticipated revenues.

Florida has been able to quickly respond to any changes in revenues. The state of Florida holds transportation revenue estimating conferences that produce 10-year forecasts at a minimum of twice annually. A 25-year forecast is also prepared annually.

The revenue estimating conferences develop official information with respect to anticipated state transportation revenues. Conferences may be called at any time by any of the principals (the DOT, the Executive Office of the Governor, the coordinator of the Office of Economic and

Demographic Research, the professional staff of the Senate and House of Representatives who have forecasting expertise, or their designees. They are generally held shortly before the annual regular legislative session begins in the early spring and also in mid-fall. Revenue estimating conferences are also held following legislative sessions when bills impacting transportation revenues are passed.

As revenues and revenue forecasts fluctuate, so does the department's work program. Fortunately, the total state revenues available for transportation have not varied considerably. However, the reduction in federal funds for FY 2002–2003 will reduce the transportation program activities. The extent of the impact will not be known until Congress determines the funding for FY 2002–2003. Since Florida DOT takes care of its preservation needs first, the funding reduction will most likely affect capacity programs and services, including congestion.

What, If Any, Performance Measures That You May Use Have a Financial Basis?

The department develops two plans that have performance measures tied to financial issues.

The first plan, as noted above, is the short-range component of the 2020 FTP. It establishes the policy direction for the department. The department's first strategic goal is to preserve and manage a safe, efficient transportation system. Essentially, the department preserves what it has before adding capacity to the system. There are currently three performance measures related to the department's preservation efforts that are directly tied to funding:

- Through 2011, ensure that 80% of pavement on the FIHS meets department standards.
- Through 2011, ensure that 90% of Florida DOT-maintained bridges meet department standards, while keeping all Florida DOT-maintained bridges open to the public safe.
- Through 2011, achieve 100% of the acceptable maintenance standard on the FIHS.

The following links to the Florida DOT short-range component, Plan-in-Brief: www11.myflorida.com/planning/policy/pdfs/src_brochure.pdf (pdf file; 516 KB).

The second plan is the Long-Range Program Plan (LRPP). The LRPP is tied to the department's Legislative Budget Request and includes one outcome measure for each of the department's six budget programs and one output measure for many of the department's 53 budget activities. The legislature uses this information as they deliberate over the state's budget. (See attached LRPP and list of measures included in the LRPP.)

Maryland

How Do You Address Financial Planning in Your Statewide Planning Process?

The Maryland Transportation Plan (MTP) includes a goal titled "Funding Our Transportation Future." The aim of this goal is to secure adequate resources to build, operate, and maintain a high quality transportation system. The main policy objective for this goal is for the department to strive to meet or exceed the capital investment recommendations for each program period. This sets out the overall policy direction for the department's financial planning.

Each year the secretary of transportation works with the department's modal administrators to determine which projects to add to the consolidated transportation program or advance to the

next stage of funding. Each project is evaluated from a number of different perspectives, including technical criteria, availability of funding, department goals, and priorities of local governments. The department determines its funding availability through a series of revenue and operating cost projections based on a long-term “moderate growth” scenario for the nation’s economy.

The department has the authority to issue its own bonds. They are issued as needed to support the annual cash flow requirements of the capital program. In addition, the department can and does employ innovative financing techniques to maximize resources. Some recent examples include certificates of participation, rental car facility charges, and safe harbor leases.

How Does Your Statewide Plan Document Financial Planning Issues?

Within the MTP’s Funding Our Transportation Future goal is a discussion of financial planning issues related to providing sufficient funding to pay for Maryland’s transportation programs and operations. The plan also provides a 20-year forecast of transportation needs based on the financial resources available to the department. This information is currently based on the findings of a recent Commission on Transportation Investment. This commission examined the gap between transportation needs and revenues, and developed recommendations pertaining to future annual levels of capital investment. These recommendations have become the department’s financial benchmarks.

How Do You Demonstrate Fiscal Constraint in Your STIP?

Maryland’s STIP shows each project on a cash flow basis, along with a chart showing federal obligation by year, by federal funding category. There is also a summary chart at the beginning of the STIP showing the total federal obligation by year, by federal funding category.

How Does the Current Fiscal/Economic Environment Play into Your Long-Range Statewide Planning and Programming Process(es)?

Unlike the financially constrained long-range plan (CLRP), the state’s long-range plan (LRP) is not required to be fiscally constrained. In addition, a project does not have to appear in a state LRP in order to receive funding. However, the priorities in the state plan form the basis for the projects submitted by the state for inclusion in the region’s CLRP.

The MTP is a statewide policy document with a 20-year horizon that includes a number of specific long-range improvement projects. The MTP was last updated in 2002. The plan forms the basis for many projects submitted by the state for inclusion in the various regions’ CLRP.

The current economic environment plays a crucial role in the development of the CLRP. Since the CLRP needs to be fiscally constrained, large, long-range projects, such as the Purple Line addition to Washington, D.C.’s, transit system, Maglev, and Georgetown Branch transit line need to account for economic downturns, and long-range financial forecasting to make sure they are affordable within the plan’s timeframe.

The office of finance takes into account current economic conditions and forecasts all the department’s revenues through the plan’s timeframe. These projected revenues are then allocated to the various region’s unfunded needs.

What, If Any, Performance Measures That You May Use Have a Financial Basis?

Maryland DOT publishes an Annual Attainment Report on Transportation System Performance. This document provides a status update on the department's progress toward meeting the goals and objectives defined in the MTP and implemented through projects, programs, and services funded through the consolidated transportation program. Within this document are two areas of performance measures that have a financial basis:

- Performance measures relating to funding our transportation future. These measures, related to the MTP funding goal, are focused on measuring innovative funding and funding adequacy. Specifically, these measures are
 - Innovative revenue obtained by the department and;
 - The difference between targeted level of funding needed to sustain the system and actual funding levels.

Additional measures that are being considered for the future include preservation and maintenance cost comparison to life-cycle costs, operating efficiencies, and cost savings.

- Cost effectiveness. This attainment report is required to indicate the cost effectiveness of investments for achieving relevant performance measures and benchmarks. This is an evolving section, as there are a number of challenges to measuring cost effectiveness. Challenges include
 - Comparing a cost per unit basis across modes;
 - Need to meet department goals that might not provide the best cost–benefit (safety, increasing nonmotorized modes); and
 - Level of measurement (by project or by capital program).

In preparation for this year's report these challenges continue to be investigated and an approach developed to better address cost effectiveness.

Massachusetts*How Do You Address Financial Planning in Your Statewide Planning Process?*

The Massachusetts Highway Department (MassHighway) has two offices that are responsible for this work—the Capital Expenditure and Programming Office (CEPO) and the Bureau of Transportation Planning and Development (MassHighway Planning). Planning receives federal projections from the FHWA and state financial projections from CEPO. Planning then initiates a series of meetings involving CEPO, the chief engineer, and the highway engineering division staff. The meetings result in a budget that accounts for the Central/Artery Tunnel Project (overseen by the Massachusetts Turnpike Authority), statewide needs including Interstate highways, capital maintenance and planning, and then regional MPO budgets. The MPO budgets are distributed by a formula developed by the Massachusetts Association of Regional Planning Agencies and adopted by MassHighway. MassHighway Planning then hosts a series of consultation meetings with Massachusetts Association of Regional Planning Agencies in central Massachusetts to discuss the proposed budgets. Once the budgets are agreed upon,

MassHighway releases the budgets as MPO “targets” to be used in developing transportation improvement programs (TIPs).

How Does Your Statewide Plan Document Financial Planning Issues?

MassHighway develops the STIP from the 13 regional TIPs. The STIP includes a CEPO-prepared comprehensive breakdown of funding assumptions, projections, and allocations for the 5-year period covered by the STIP. The FHWA participates in the financial consultation between the commonwealth and the MPOs, and generally sends representatives to MPO meetings across the state.

How Do You Demonstrate Fiscal Constraint in Your STIP?

The financial analysis (described above) demonstrates financial constraint in the draft STIP submitted to the FHWA and Federal Transit Administration (FTA) in September of every year. The federal agencies review the STIP to ensure that it meets financial constraint requirements.

How Does the Current Fiscal/Economic Environment Play into Your Long-Range Statewide Planning and Programming Process(es)?

Under the terms of an agreement between the state and the MPOs, the commonwealth of Massachusetts is required to spend a minimum of \$400 million annually on road and bridge construction, not including the Central Artery/Tunnel Project. Therefore, even current economic challenges, MassHighway assumes that it will continue to spend at that level and planning activities are conducted with the same assumption.

Where there is uncertainty with specific year-to-year projections of funds available for new projects, MassHighway Planning advises the MPO staff to assume level funding.

What, If Any, Performance Measures That You May Use Have a Financial Basis?

As mentioned above, MassHighway’s ultimate performance measure every year is meeting the minimum expenditure requirement of \$400 million. Other performance measures used in planning relate to the status of projects on the first year of the current TIP, whether or not they were advertised for construction, whether there is reasonable geographic equity in the distribution of advertised projects, or how well the programmed amount matched up with advertised amounts.

Michigan

How Do You Address Financial Planning in Your Statewide Planning Process?

The statewide planning process under TEA-21 requires Michigan DOT and Michigan’s 12 MPOs each to develop an LRP that will provide the basis of transportation programs over the next 20 years. The implementation of these plans is accomplished through a 3-year STIP, which lists actual projects to be implemented and how they are to be financed.

Michigan DOT monitors travel and economic trends that impact transportation revenues used in the LRPs and STIP. Revised revenue forecasts are incorporated into the planning process when

appropriate as determined by the Bureau of Transportation in consultation with our Finance Division and the Department of Management and Budget.

At the highest level, the state LRP (SLRP) financial planning is based on revenue trends and projections in comparison to needs based on our long-term goals. The MPO LRP base revenue estimates on current funding levels as shown in the latest TIPs projected over a 20-year period. A more precise analysis of program funding levels comes with the Michigan DOT's 5-year road and bridge program, STIP, and MPO TIP development.

The 5-year road and bridge program is a rolling 5-year program for state roads only that is updated annually by adding and deleting a year to the program with each update. The primary purpose of the 5-year road and bridge program is to convey to the public the road and bridge projects the department intends to construct in that 5-year period. It is much easier to understand and more useful as a communication tool than the STIP.

The projects included in the 5-year road and bridge program provide the basis for the 3-year trunkline program in the STIP and the MPO TIPs. The collaborative process in developing the 5-year road and bridge program includes extensive MPO, rural task force, and general public involvement. The 5-year road and bridge program development gives MPOs adequate notice to help coordinate their 3-year TIPs.

The most precise application of financial planning comes in the STIP/TIP process. The state program is based on federal aid with obligation limitations plus estimated state gas tax revenue. Local programs are based on authorized levels of federal aid plus local match. State programs are financially constrained at the state level with the projects that take place within MPO boundaries becoming part of the MPO TIP. Revenue for projects on the state level system is not sub-allocated by MPO but is based on the state trunkline projects selected for that area. Local funding and local federal aid is added to the resources that will be available to finance programs contained in the TIPs. For the TIPs, the financial constraint requirement has a major impact on project selection and scheduling.

How Does Your Statewide Plan Document Financial Planning Issues?

The MPO LRPs, the 5-year trunkline program, and the STIP and the TIPs are each developed in a financially constrained manner, but at different levels of detail and documentation, consistent with the information available. Michigan DOT's SLRP is primarily a policy type of document that includes the identification of high priority corridors and some high profile projects but is not financially constrained. It discusses Michigan DOT's long-term objectives, strategies to achieve those objectives, and challenges facing the state in terms of future revenue, both for addressing long term needs and in identifying new sources and methods for generating that revenue.

How Do You Demonstrate Fiscal Constraint in Your STIP?

Financial constraint is demonstrated in the STIP and in each MPO TIP as a detailed comparison of "New Resources" compared to "New Commitments." This comparison is documented through a series of financial tables in the MPO TIPs that are linked to non-MPO area tables and statewide summary tables in the STIP report. The method of financial constraint is rigorous and time consuming. The FHWA requires constraint to be absolute—i.e., no "wobble room."

New Resources are the estimated annual stream of federal and nonfederal revenue to a state or local program. New commitments are the total cost of project phases that will be started (funds obligated) during the year and funded by those programs.

Michigan DOT provides MPOs with estimates of their levels of funds from direct federal programs, state trunkline projects and associated funds, and state allocations of federal and state funds. The MPO provides estimates for local sources of funds such as dedicated tax revenues, local general fund obligations, and other sources. Estimates of revenue are made for statewide grant type programs such as enhancements based on the best available information and includes in the TIPs as general program accounts (GPAs).

Michigan DOT estimates resources available for the non-MPO areas of the state and includes them in the STIP along with a listing of non-MPO trunkline and rural local projects.

New resources does not represent a budget. It is a benchmark for the purpose of demonstrating that the program is financially constrained. Under this concept, benchmark new resources are compared with the total cost of new commitments. When resources exceed or equal commitments, the program is clearly constrained. But, it is possible for new commitments to exceed new resources and for the program to still be constrained (e.g., when a project is authorized advance construct in 1 year and converted in a future year that has reduced new commitments). Where this occurs a detailed explanation must be presented.

The new resources/new commitments comparison establishes a gate into the STIP or TIP that every project must pass and must pass only once. This greatly simplifies the STIP and TIPs and provides a more rigorous test of financial constraint.

This approach avoids the past practice of blurring the distinction between the obligation of federal program funds, cash reimbursements of the federal share of project costs, and actual cash expenditures on projects. It also allows Michigan DOT to keep the listing of new projects as the primary purpose of TIPs and the STIP, and it provides a consistent, connected, and understandable view of the program across all TIPs and the STIP.

How Does the Current Fiscal/Economic Environment Play into Your Long-Range Statewide Planning and Programming Process(es)?

Current economic conditions are monitored closely, and when appropriate, our assumptions concerning future available revenue are adjusted (independent of any federal regulatory requirements). Michigan DOT allocates estimated revenue to broad program categories to which we refer as the program “template.” Program categories are linked to program goals and performance measures. Programming of projects, both short- and long-term, are controlled by the template. Budget fluctuations trigger template changes, which may or may not trigger program changes, depending on their size and certainty. We change short-range revenue forecasts much more frequently than longer-range revenue forecasts. We adjust the program to remain financially responsible. The 5-year road and bridge program is constrained to a revenue estimate with clearly documented assumptions.

The economic environment does not always directly affect the programming process, but fluctuations in revenue will, of course, affect the schedule of program delivery. Reductions in available revenue may necessitate looking at innovative ways to finance the program. Generally, we will delay projects rather than reconfiguring our programs or eliminating projects.

Michigan DOT recognizes the differences between the planning process represented by the STIP and the financial processes that actually control the expenditure of funds. We have developed a cash flow model to track project reimbursements over multiyear periods, use of advance construct financing, use of bonding, and changes in estimated revenue. This information is compared with programmed expenditures, conversion of AC, and payment of debt service to assess the overall financial condition of the program as expressed as a projected end-of-year cash balance.

What, If Any, Performance Measures That You May Use Have a Financial Basis?

Michigan DOT monitors its program delivery through financial obligations on a continuing basis. Our most important performance measure is whether we use all available obligation authority every year. We also look at the percentage of projects listed as new commitments for the fiscal year compared to the percentage that are obligated in that year. This is done for both trunkline and local programs. We also continuously monitor the local agency balances to determine what amounts of authorized federal aid have been obligated to determine if local programs are being delivered as promised in the TIPs.

The cash flow model explained above, as well as other financial monitoring tools, gives us feedback on the rate at which we are actually expending available state and federal funds. Michigan DOT monitors the program size, composition, and delivery on a continuing basis. Michigan DOT's programs would be financially constrained even if we didn't have to meet STIP financial constraint requirements. The state and Michigan DOT internal controls are sufficient to ensure prudent and responsible budgeting and programming. The STIP requirements for financial constraint impose additional layers of analysis that increase administrative costs without any corresponding increase in financial accountability.

Minnesota*How Do You Address Financial Planning in Your Statewide Planning Process?*

Moving Minnesota 2003, the Draft Minnesota STP for years 2003 to 2023, is a policy document that describes types and levels of funding typically available statewide. A 20-year financial/funding forecast is provided in planning guidance for Minnesota DOT district plans. These plans contain performance scenarios that show a fiscally constrained future based on recent funding trends, and a future that is based on the a reasonable approach to achieving customer expectations.

How Does Your Statewide Plan Document Financial Planning Issues?

Moving Minnesota 2003 sets up the policy and performance framework including measures and targets that drive the planning process and, therefore, funding strategies.

How Do You Demonstrate Fiscal Constraint in Your STIP?

State and federal funds are estimated for the 3-year period of the STIP; each district is given a funding target (a portion of statewide funds based on system size and usage) to develop their area TIP. Area TIPs are then integrated into the STIP.

How Does the Current Fiscal/Economic Environment Play into Your Long-Range Statewide Planning and Programming Process(es)?

The forecasted funding targets for STIP are based on trend analysis updated annually. Current revenue forecasts have been lowered due to the current economic environment. Long-range revenue projections for planning are based on a quantitative analysis of long-term revenue trends that should capture revenue changes due to political and economic events.

What, If Any, Performance Measures That You May Use Have a Financial Basis?

All long-range performance targets or goals are based on a reasonable, achievable funding scenario. However, these are not explicitly projected. Rather, goals/performance targets are set based on experts' knowledge and understanding of what could be achieved under a "reasonable but optimistic future funding scenario." Projected performance is based on recent funding history.

Ohio

How Do You Address Financial Planning in Your Statewide Planning Process?

Ohio DOT has established a "funds management committee," which includes representatives from central office including the division of planning, finance, construction, pavements, major bridges, etc. This committee determines long- and short-term funding allocations to districts and major program areas based on

- a. Funding projections,
- b. Quantitative performance measures of existing and projected conditions (such as bridge and pavement conditions), and
- c. Funding estimates needed to address quantitative performance measure-based goals for each program area and condition.

How Does Your Statewide Plan Document Financial Planning Issues?

Ohio DOT regularly develops or updates its financial projections, these projections are documented in the statewide plan and the funds management process.

How Do You Demonstrate Fiscal Constraint in Your STIP?

All programs and all funding sources are reviewed for financial constraint prior to being included in the STIP. Except for emergencies, Ohio DOT has restricted STIP amendments to quarterly. Planning staff quarterly review and make adjustments as needed to keep the STIP financially constrained.

How Does the Current Fiscal/Economic Environment Play into Your Long-Range Statewide Planning and Programming Process(es)?

Ohio DOT expects less funding and will take the cut out of its capacity-adding program. Ohio DOT will continue to fund its maintenance and safety programs as a priority.

What, If Any, Performance Measures That You May Use Have a Financial Basis?

All performance measures link back to a financial base. Ohio DOT tries to establish financially realistic goals and the performance goals are set to be realistically achievable based on the amount of funding to be available.

Texas

How Do You Address Financial Planning in Your Statewide Planning Process?

The first generation statewide plan did not address financial planning. Although considerable effort was devoted to this planning undertaking, this was basically a policy document that addressed the considerable need of all modes of transportation without financial constraint. A second generation statewide plan is currently in progress but will not address financial constraint since individual projects costs will not be identified. Texas DOT's Transportation Planning and Programming Division addresses financial planning through a unique planning process that results in its Unified Transportation Program (UTP). This planning and programming process is project specific and is financially constrained.

How Does Your Statewide Plan Document Financial Planning Issues?

The statewide plan update will discuss funding options and innovative finance issues, but will not contain project specific funding commitments. The UTP will document individual projects for development and this document is financially constrained to expected income resources. The STIP, through its financial plan, forecasts revenues and expenditures for a short period of years and is financially constrained.

How Do You Demonstrate Fiscal Constraint in Your STIP?

The current STIP (2003–2005) is financially constrained to anticipated resources. The 2004–2006 STIP is anticipated to link fiscal constraint to the UTP process, which is fiscally constrained and also project specific for a longer planning period. Texas DOT is currently conducting a comprehensive revised UTP process. The new process under development will include planning for a longer period of time.

How Does the Current Fiscal/Economic Environment Play into Your Long-Range Statewide Planning and Programming Process(es)?

The fiscal/economic environment does not currently impact Texas DOT's efforts nor responsibility in producing its long-range statewide plan. The reevaluated UTP process is expected to identify needs and the gap between needs and anticipated resources.

What, If Any, Performance Measures That You May Use Have a Financial Basis?

Performance measures are not currently used in preparation of the statewide plan.

Washington

How Do You Address Financial Planning in Your Statewide Planning Process?

The Washington State DOT's statewide planning process identifies system deficiencies and solutions to those deficiencies. Prior to 2002, the Transportation Commission would balance projected revenues against proposed solutions, which resulted in a financially constrained project list.

Washington's Transportation Plan (WTP), which is Washington's statewide 20-year multimodal plan, addresses all transportation system needs. The current 2003–2022 update of the WTP no longer constrains the list of needs. This provides flexibility in programming opportunities in relation to fluctuations in available revenue. By no longer constraining the needs list, it also avoids hard "trade-off" decisions, that may be irrelevant in future years due to continuously changing economic and environmental factors. The completed statewide plan is brought to the Transportation Commission for final approval.

State law also requires Washington State DOT to submit a 6-year expenditure plan, balanced by available revenue, when submitting their biennial budgets (RCW44.40.070). Washington State DOT's internal priority programming process, used to develop the 6-year plan, has specific criteria and methodology. The type of criteria considered in the state highway system priority programming includes

- The highway improvement program:
 - Use of benefit–cost analysis,
 - Traffic congestion,
 - Heavily traveled corridors, and
 - Synchronization with other transportation projects; and
- The highway preservation program:
 - Life-cycle cost analysis,
 - Traffic volume,
 - Subgrade soil conditions,
 - Environmental and weather conditions,
 - Materials available, and
 - Construction factors.

In addition to highway priority programming, the Washington State Ferry system and the state's Intercity Passenger Rail program follow a similar process.

How Does Your Statewide Plan Document Financial Planning Issues?

As noted above, the current statewide plan identifies current transportation system deficiencies and presents them as a 20-year needs list (a list of potential solutions to those deficiencies). The current available revenue projected for the next 20 years doesn't meet the amount necessary to satisfy the 20-year needs list. Given this revenue shortfall, priority programming is necessary to develop a viable list of projects. The current WTP does not contain a constrained list of projects, nor does it document that portion of the financial planning process. The WTP does contain an overview of the current conditions facing the statewide transportation system; an assessment of the state's transportation investment needs for the next 20 years; a comparison of the public and private costs of transportation; a broad discussion of costs associated with transportation in the state; and the major sources of transportation revenue that usually contribute to state funding.

How Do You Demonstrate Fiscal Constraint in Your STIP?

Washington State DOT's role is to compile the MPO TIPs and forward them to the governor and then to the FHWA for their successive approvals. Washington State does not use the STIP process as

a budget tool to fiscally constrain transportation funding. This is considered to be a “bottoms up” approach and is consistent with the state Growth Management Act (GMA).

With this background on the ministerial role of the state, the MPOs and rural Washington counties are annually allocated federal funds for different “colors of money”—money for different types of programs. The MPOs allocate these funds to the local agencies through a regional competitive process or through other processes. When the MPOs and rural counties submit their financially, constrained TIPs to the state, Washington State DOT checks the submitted totals. Washington State DOT compares the “carry-forward dollars”—previous years’ un-obligated dollars by program—to both (1) the MPO’s and rural county’s current allocation; and (2) the second and third years estimated funding allocation. This analysis ensures current and planned projects do not create an “over programming” of available funds. The MPO or rural county is notified if apparent over programming exists so revisions can be made. Washington State DOT program management works in concert with the MPOs and rural counties and also ensures Washington State DOT projects are not over programmed.

How Does the Current Fiscal/Economic Environment Play into Your Long-Range Statewide Planning and Programming Process(es)?

Washington State DOT’s Highway System Plan (HSP) is updated approximately every 2 years. As current fiscal and economic environmental factors come into play, Washington State DOT compares its system plan list of deficiencies and needs with the revenue available and recalibrates which projects on the list of needs are feasible.

The current fiscal/economic environment has had a significant impact on the long-range statewide planning and programming process. In 2000 a taxpayer revolt (Initiative 695) brought about the loss of approximately \$350 million per year in transportation tax revenue. This tax revenue loss and the current recession have forced economic belt tightening. The resulting revenue shortfall required an immediate reexamination of the programs and projects previously funded through the lost revenue.

The impact of this current environment has focused attention on the preservation and maintenance of the present infrastructure. Short-term capacity improvements have focused on some congestion relief projects through operational efficiencies. Long-range planning and programming has become much more problematic as Washington State DOT falls further and further behind the anticipated needs to keep up with the growth in travel. To some political and business leaders, the current outlook is already beginning to affect the prospects for future growth and economic development.

In 2002, the Washington State Legislature passed legislation that allows the creation of a Regional Transportation Investment District (RTID) in the Central Puget Sound Region (E2SSB 6140). The RTID legislation also provided funding mechanisms for implementing a regional transportation investment plan (subject to a public vote) for regional transportation projects. These projects may include capital improvements or improvements to a highway of statewide significance that adds a lane or new lanes, HOV lanes, park-and-ride lots, vans for van pools, and buses. Local roads leading to highways and new highways are also eligible for revenue if certain conditions are met.

This new type of regional funding package in addition to the revisitation of such funding mechanisms like congestion pricing and tolls are being studied for inclusion in the LRP process.

What, If Any, Performance Measures That You May Use Have a Financial Basis?

Washington State DOT uses a wide array of criteria to prioritize projects through priority programming analysis of the Highway Improvement and the highway preservation programs. While Washington State DOT does not currently have a specific, financially based performance measure, some examples of the criteria employed are

- The highway improvement program:
 - Use of benefit–cost analysis, and
 - Traffic congestion time delay; and
- The highway preservation program:
 - Life-cycle cost analysis.

In response to a legislatively sponsored Blue Ribbon Commission on Transportation and subsequent 2002 legislation, the secretary of transportation and the Transportation Commission’s Benchmark Committee have already begun to define and establish benchmarks for Washington State DOT. The 2002 Washington State Legislature passed the Transportation Efficiency Act (ESHB 2304), which states several policy goals for the operation of, performance of, and investment in the state’s transportation system. The policy goals are to be the basis of “detailed and measurable performance benchmarks” to be established by the transportation commission.

Section 101 of the act states, “In addition to improving safety, public investments in transportation shall support achievement of these and other priority goals.” Substantial progress has been made to date on many benchmark areas. But two of the financially based topics that have not yet been addressed in depth and present significant challenges are

- Administrative costs as a percentage of transportation spending. This goal requires further interpretation and development because it is not clear that there are any data around the country to serve as a useful basis for state-by-state comparisons. This area is expected to receive initial attention upon the arrival of the new Washington State DOT chief financial officer.
- Median cost per vehicle revenue hour of public transit agencies.

The secretary of transportation intends for the remaining topics to be taken up by the end of 2002, in coordination with the commission’s Benchmark Committee. Requisite coordination with other government agencies, including local government associations, will occur over the summer and fall of 2002. The current plan is to propose the required “detailed measurable performance benchmark” to the commission for its review and approval by the end of March 2003.

Wisconsin*How Do You Address Financial Planning in Your Statewide Planning Process?*

In the statewide planning process, Wisconsin tries to identify all major cost components (such as various capital and operating expenditures for rail passenger and transit; improvement needs for highways, etc.) and compares them to estimates of likely future revenues. Highway maintenance and operations costs have not been included in past plans, but will be included in the next generation of our plans.

Wisconsin's statewide plans are considered financially constrained to reasonably achievable levels. While the plans may show a shortfall, that shortfall is established at a level that could be eliminated over time.

How Does Your Statewide Plan Document Financial Planning Issues?

The plans typically show the cost of recommendations and compares that to expected revenue. In some plans we also make recommendations as to possible revenue-raising mechanisms that might be used to fill the funding gaps.

How Do You Demonstrate Fiscal Constraint in Your STIP?

All projects show funding sources and the totals of each source are limited by what is available either on a statewide basis or for specific MPOs.

How Does the Current Fiscal/Economic Environment Play into Your Long-Range Statewide Planning and Programming Process(es)?

The current fiscal environment will likely have little impact on LRPs. Since they are 20 to 25 years, we assume the economic downturn will be of limited duration.

As far as programming, the fiscal impact is felt. We have had to stretch projects out or delay them to accommodate less-than expected revenues, at the federal, state, and local levels.

What, If Any, Performance Measures That You May Use Have a Financial Basis?

Only the comparison between costs and revenues is directly a financial measure. However, finances did influence the thresholds we use for pavement and congestion. The thresholds we adopted were set at their respective levels, partially to lower costs.

TABLE 1 Summary of State Responses at Peer Exchange: Fiscal Constraint and Financial Planning Issues

	Q1: How do you address financial planning in your statewide planning process?	Q2: How does your statewide plan document financial planning issues?	Q3: How do you demonstrate fiscal constraint in your STIP?	Q4: How does the current fiscal environment play into your long range statewide planning and programming process(es)?	Q5: What, if any, performance measures that you may use have a financial basis?
AK	Conduct an Investment Analysis, a broad multimodal analysis that compares needs to available resources, as part of the STP.	Investment Analysis, a subsection of the STP.	<ul style="list-style-type: none"> – Estimate future federal funds. – Set targets ≈ estimated funds. – Schedule project so fund used ≈ target amounts. – Adjust project funding source to match apportionment. 	No large impact because rely on long range forecasts (economic, population, etc.).	Tracks whether Alaska obligates all available federal funds each fiscal year.
CA	Funds for STIP programming estimated biannually (includes federal, local and other funds) and expenditure limits for each transportation agency are set.	STP advocates the flexibility of transportation revenue expenditures and serves as a guide for all long range planning.	STIP program funding limited to identified revenue estimates.	Planning/programming process is iterative so takes revenue fluctuations into account; a decrease in revenue has not affected STP yet but may affect implementation.	Apply a cost-effectiveness performance measure at the project level.
FL	Transportation funds from dedicated sources are forecasted and summarized in a 10-year finance plan (contains annual forecasts). Subsequent work plans (5-year & 10- year) must be balanced to forecasts and designed to meet objectives set by STP. For longer range plans the 10-year Financial Plan is extrapolated.	Addressed in a variety of documents. As part of the Program & Resource Plan (10-yr plan) development, financial planning issues are annually reviewed and updated by the Department executive management.	Estimates of available funds determine the number of projects and services included in the STIP. Funds are allocated to various programs and geographic districts, then matched to specific projects, and finally scheduled or programmed. The commitment authority must match the Financial Plan and well as a shorter Cash Forecast.	The work program fluctuates with revenue forecasts keeping preservation needs met first (revenue estimates are updated at least twice a year). Transportation revenue has remained relatively constant but future decrease in federal funds may impact activities.	The Short-Range component of the STP sets preservation oriented performance measures that are tied to funding priorities. The performance measures listed in the Long-Range Program Plan are used by the Legislature for State budget deliberations.

(continued)

TABLE 1 (continued) Summary of State Responses at Peer Exchange: Fiscal Constraint and Financial Planning Issues

	Q1: How do you address financial planning in your statewide planning process?	Q2: How does your statewide plan document financial planning issues?	Q3: How do you demonstrate fiscal constraint in your STIP?	Q4: How does the current fiscal environment play into your long range statewide planning and programming process(es)?	Q5: What, if any, performance measures that you may use have a financial basis?
MD	Identifying adequate resources (including bonds and innovative techniques) to meet or exceed capital investment needs is a goal listed in the STP. Funding levels are determined through revenue and operating cost projections based on a long-term “moderate growth” scenario. Each project is evaluated from numerous perspectives including availability of funding.	STP discusses financial planning issues and provides a 20-year forecast of transportation needs based on the financial resources available to the MDOT. The information reflects a study by the Commission on Transportation Investment that examined the gap between needs and revenue.	The STIP shows each project on a cash flow basis and includes the federal obligation by year and by funding category.	The STIP is not required to be fiscally constrained and projects do not have to appear in the STIP to receive funding. However, Maryland also has a CLRP that is based on the STP priorities. The current economic climate plays a crucial role in the CLRP because it impacts funding forecasts.	The “Annual Attainment Report on Transportation System Performance” evaluates innovative funding & funding adequacy. Additional measures being developed include a cost effectiveness measure, cost/life-cycle cost comparisons, operating efficiencies and cost savings.
MA	CEPO produces state funding projections. CEPO and federal funding projections are used to produce a budget that covers state and local needs. Final budget finalized through a collaborative effort.	STIP developed from the 13 regional TIPs. CEPO-prepared funding assumptions, projections and allocation included in the STIP.	The CEPO funding projections ensure the STIP is financially constrained.	Even under economic challenges, Massachusetts is required to spend a minimum of \$400 million annually on road and bridge construction (not including the Central Artery/Tunnel Project).	Besides the \$400 million spending requirement, MassHighway also evaluates the status of projects on the first year of the current TIP (geographic equity, balance between advertised and actual programmed amounts, etc.).

(continued)

TABLE 1 (continued) Summary of State Responses at Peer Exchange: Fiscal Constraint and Financial Planning Issues

	Q1: How do you address financial planning in your statewide planning process?	Q2: How does your statewide plan document financial planning issues?	Q3: How do you demonstrate fiscal constraint in your STIP?	Q4: How does the current fiscal environment play into your long range statewide planning and programming process(es)?	Q5: What, if any, performance measures that you may use have a financial basis?
MI	The STP financial planning is based on revenue trends and projections in comparison to needs based on our long term goals. The MPO LRP revenue estimates are derived from current TIPs. A more precise analysis of funding levels occurs during the 5-Year Road and Bridge Program, STIP, and TIP development. Financial constraint has a major impact on TIP project selection. Revised revenue forecasts are incorporated in the planning process as needed.	The MPO LRP, the 5-year trunkline program, STIP and TIPs are developed in a financially constrained manner at different levels of detail and documentation. STP is not fiscally constrained but discusses revenue challenges.	The STIP and TIPs contained detailed comparison of “new resources” against “new commitments.” This comparison creates a gate through which each project must pass. Michigan DOT estimates resources available to non-MPO area of the state and includes them in the STIP along with a listing of non-MPO trunkline and rural local projects.	Current economic conditions are closely monitored and projections adjusted as needed. Short-range projection updates more frequently than long-range projections. The economic environment may not affect programming process but may impact the schedule of program delivery.	Tracks whether MDOT obligates all available federal funds each fiscal year. Analyze the percentage of projects listed as new commitments for the fiscal year compared to the percentage that are obligated in that year. Evaluate if local programs are being delivered as scheduled in the TIPs.
MN	The STP describes the types and levels of funding typically available statewide. The 20-year forecasts guide MnDOT district plans, which contain a fiscally constrained performance scenario and a scenario based on achieving customer expectations.	The STP sets up the policy and performance framework including measures and targets that drive the planning process, and, therefore funding strategies.	Each district is given a three year state and federal funding estimates for the development of their TIPs.	Funding forecasts are updated annually and take current political and economic events into account. Therefore, current revenue forecasts have been lowered.	All long-range performance targets or goals are based on a reasonable and achievable funding scenario.
OH	A “funds management committee” determines long and short term funding allocations to districts and major program areas based on funding projections, quantitative performance measures and funding needs.	Financial projections are regularly updated and documented in the STP and the funds management process.	All programs and all funding sources are reviewed for financial constraint prior to being included in the STIP. The STIP is reviewed and adjusted quarterly to ensure it is financially constrained.	If revenues decrease the capacity-adding programs will be cut to keep maintenance and safety programs as priorities.	All performance measures link back to a financial base. Goals are set to be financially realistic.

(continued)

TABLE 1 (continued) Summary of State Responses at Peer Exchange: Fiscal Constraint and Financial Planning Issues

	Q1: How do you address financial planning in your statewide planning process?	Q2: How does your statewide plan document financial planning issues?	Q3: How do you demonstrate fiscal constraint in your STIP?	Q4: How does the current fiscal environment play into your long range statewide planning and programming process(es)?	Q5: What, if any, performance measures that you may use have a financial basis?
TX	The STP identifies need but is not fiscally constrained (no project costs included). Financial planning occurs in the development of the Unified Transportation Program (UTP), a project specific and fiscally constrained process.	The STP discusses funding options and innovative financing issues but does not contain project specific funding commitments.	The STIP through its financial plan forecasts short-term revenues and expenditures and is financially constrained. Texas DOT is working to link the STIP to the UTP, a longer fiscally constrained process.	The current economic environment does not currently impact STP but the reevaluation of the UTP will most likely identify gaps between needs and resources.	Performance measures are not currently used in preparation of the STP.
WA	The STP is not a constrained list to provide flexibility in programming in relation to changes in revenue. However, Washington State DOT uses a priority programming process to develop the required 6-year balanced expenditure plan when submitting biennial budgets.	The STP contains an overview of current conditions, investment needs, public and private costs and revenue sources.	The TIPs are fiscally constrained based on annual allocated “colors of money” from Washington State DOT. The TIPs are checked by Washington State DOT and then combined to form the STIP.	The current environment has increased the emphasis on preservation and maintenance, congestion relief through operational efficiencies, and innovative financing options. LRP/programming has become more problematic.	No financial specific measures but Washington State DOT uses financial criteria in the priority programming process. Currently developing benchmarks to evaluate operation, performance of, and investment in the transportation system.
WI	During the statewide planning process, the majority of costs components are identified and compared to future revenues. Plans are financially constrained but may show shortfalls at levels that could be eliminated over time. Maintenance and operations costs will be included in future plans.	The cost of recommendations and expected revenues are listed in the plans. Some plans also recommend revenue-raising mechanisms.	All projects show funding sources that do not exceed the available source totals (either on a statewide basis or for specific MPOs).	The current fiscal environment has limited impact on LRPs. On the programming level, the fiscal situation has resulted in the stretching out or delay of projects.	The comparison between costs and revenues is a financial measure used. Finances also influenced pavement and congestion thresholds.

NOTES: STP: Statewide Transportation Plan; STIP: Statewide Transportation Improvement Plan; TIP: Transportation Improvement Plan; LOS: Level of Service; LRP: Long Range Plans.

ADDITIONAL DISCUSSION ITEMS

During the sharing of the written responses presented in the previous section, participants expressed an interest to talk about issues that were not covered in the pre-set questions. The following text summarizes the items discussed.

Fiscally Constrained Transportation Plans

The question was raised about how states handle advance construction costs in fiscally constrained transportation plans. State representatives shared some different approaches. For example, Florida maintains fiscal constraint on a cash flow basis while Alaska counts advance construct costs when they obligate funds. New Mexico was mentioned as a state that frequently managed advance construction costs and would be a good source for additional information.

The discussion raised another question, what is the definition of fiscally constrained? Is fiscal constraint based on a cash flow basis, obligation, or reasonably available funds? Does the term have a different meaning from a state DOT perspective versus the FHWA? According to some, the confusion surrounding these terms suggest clearer definitions from the FHWA would be beneficial.

Some states also expressed concern that FHWA is making policy based on the poor fiscal performance of a few states. Many states have sufficient checks and balances and do not benefit from FHWA scrutiny. For example, the estimated revenues in one state are reviewed every quarter by numerous departments and then the estimates are re-checked by the FHWA, an unnecessary step from the state's point of view. Another state DOT performs a monthly analysis of cash flow and projections to maintain a balanced budget. Many also expressed the desire that FHWA division policies be consistent across the country and that staff have more training on state financial processes.

State representatives were asked how many full-time equivalent employees went into maintaining fiscal constraint. Although there was not a definite answer, a common response was that the number was very high because it is a frequently occurring activity (e.g., during STIP and STP preparation). As an example of the magnitude of federal requirements, Susan Mortel distributed sample documents required to demonstrate fiscal constraint in Michigan (see Appendix B).

The discussion concluded with a review of the rationale for fiscal constraint in transportation plans. The goal was to make TIPs and STIPs a reasonable project list instead of an endless wish list. All participants agreed that this goal had been achieved. Fiscal constrained is also viewed as a means to show accountability of public funds and will help ensure flexible funding in future legislation. However, many state DOTs feel the requirements to demonstrate fiscal constraint are excessive and should be more flexible.

Cost Estimates and Financial Planning

A key problem with maintaining fiscal constraint is project cost estimation overruns. The “Big Dig” in Massachusetts is a notorious example with costs exceeding original estimates by 300%. The question was raised why does costs estimation overruns occur? An article by Flyvbjerg et al. (1) found that agencies were purposefully low-balling costs to get projects approved. However, extra costs naturally occur in transportation projects from elements as simple as an obstructive

boulder or due to fluctuations in the price of asphalt. In addition, designers typically create plans without taking fiscal constraints and potential cost fluctuations into account. Transit projects typically face cost overruns because more unforeseen problems occur in urban areas and underground terrain (e.g., archeology sites).

Maryland conducted a study on project cost forecasts and found that estimates were typically 25% below actual costs particularly in urban areas. The study reported ROW costs, damage expenses and utility modifications were not properly estimated. Maryland also found that additional work was added to projects after approval (e.g., resurfacing). As a result of the study, Maryland will not program a project until sufficient engineering work identifies a definite estimate. Bridge and road managers must also sign off on project estimates increasing staff accountability. Finally, the ability of top officials to control costs is being linked to their salaries.

One potential barrier to addressing cost overruns is that FHWA will not grant National Environmental Policy Act of 1969 (NEPA) approval until a state DOT has identified funds within a fiscally constrained plan. A catch-22 exists: states need funding to develop accurate estimates but in order to receive funding the state must show the project fits into their fiscally constrained plan. A potential solution is to designate federal funds for preliminary engineering and NEPA life requirement in the TIPs.

Washington State DOT has a cost estimate validation process tool that uses risk and probability to predict the likelihood a project will exceed estimated costs. Also, costs are expressed in ranges and in year of expenditure dollars. This tool has been applied to major corridor projects in the Puget Sound Region to refine estimates for a regional funding proposal. Since state law requires projects funded under this regional proposal to not exceed 20% of the original project estimate approved by voters without another public vote, it's important for Washington State DOT projects to account for risk, contingency, and schedule in their costs estimates. A large part of increasing project costs is delay in the schedule, which makes year of expenditure a key variable in this cost estimation process.

Massachusetts discussed problems with scope creep and low construction cost estimates. MassHighways has addressed these issue by establishing a project review committee, including a line item in the STIP for construction-cost overruns (currently \$8 to \$10 million), and holding project sponsors to cost increases over 10%. In addition, no project is approved until 25% is designed.

The discussion ended with a brief dialogue about mega projects. Due to sizeable funding requirements, mega projects use a large percentage of the capital outlay budget (e.g., the Woodrow Wilson Bridge project in Maryland requires 50% of the capital outlay budget). To finance mega projects funds must be redirected from other places in the state. Therefore, it is essential to demonstrate to the public why the mega project benefits the state as a whole. For example, how does a project that improves highway congestion help a person who does not own an automobile?

In general, costs estimation problems are magnified with mega projects. For example, a large project distorts the market resulting in contractor bids far greater than estimated costs. This situation is exaggerated when several states are planning mega projects. One recommendation is to off-set project between states giving state DOTs market power. However, explaining to the public that a project is being delayed due to another state would be very difficult. Another more feasible idea is to split a mega project into smaller projects.

Revenue Distribution

Revenue distribution and geographic equity are important issues that are difficult to tackle in the statewide planning process. The peer exchange participants shared the following approaches to revenue distribution in their state:

- Maryland revenue distribution is formula driven.
- California distributes 60% of funds to local agencies and 40% to Caltrans.
- Massachusetts recently developed a distribution formulas through a collaborative effort.
 - Michigan first distributes preservation dollars and then allocates remaining funds for congestion projects typically selected through a political process.
 - Wisconsin allocates preservation dollars based on criteria (e.g., VMT and pavement condition) but major projects are prioritized by the transportation projects commission.
 - Florida has passed numerous statutes to guide the distribution of revenues down to the district level (e.g., 50% of all funds earmarked for highway improvements are designated for intrastate segments and 15% of all state revenue are allocated to transit). As much as possible, the revenue is spent in the county where it was collected.

Most participants felt that preservation distribution formulas are easier to implement than congestion formulas and can be based on available data. In addition, capacity projects are typically very political. Finally, no single distribution approach exists that will be considered fair and equitable to all constituents.

Other Topics

Peer exchange participant expressed interest to further discuss the following issues but due to time constraints, they were not addressed.

1. How are states handling projects with greater than \$1 billion budgets?
2. What are the contingency plans?
3. How are states using fiscal constraint in long-range transportation planning?
4. How is timing of environmental approval relative to planning and programming?
5. What is the statewide process for geographic distribution of funding?

REFERENCE

1. Flyvbjerg, B., M. S. Holm, and S. Buhl. Underestimating Costs in Public Works Projects: Error or Lie? *Journal of the American Planning Association*, Vol. 68, No. 3, 2002, pp. 279–296.

Addressing Congestion in State Transportation Plans

INTRODUCTION

Congestion is a pressing issue facing state DOTs. Our vast transportation system includes over 4 million mi of road, 200,000 mi of rail track, 580,000 bridges, 350 commercial ports, and 5,500 airports. This impressive transportation system provides Americans and businesses with a high level of mobility. Our transportation infrastructure supports over 4 trillion mi of passenger travel and 3.7 trillion tons-mi of freight every year. (1) However, the number of trips, the length of trips and annual passenger miles have grown steadily over time pushing our transportation system to its limits.

Congestion occurs when the number of vehicles on a road exceeds the road's design capacity. Congestion leads to increased travel times and fuel usage due to stop-and-go traffic. On the business side, congestion can interrupt just-in-time manufacturing processes, delay delivery schedules, and impede general economic transactions. (2) A recent study by the Texas Transportation Institute (TTI) estimated that since 1982 the volume of roadways with congested travel conditions in 75 major cities has increased by 71% (34% in 1982 to 58% in 2000). (3)

To learn more about how states are addressing congestion in their STPs, each participant was asked to answer the following questions:

1. How does your statewide plan address congestion?
2. What performance measures are used to describe the congestion problem and the effect of congestion-related projects?
3. How does your plan address funding and implementing congestion-related projects?
4. What is the relationship between capital and operations approaches to congestion in your plan?
5. What intergovernmental relations issues is your state facing related to congestion? (city/suburb, urban/rural, state/MPO; etc.)
6. What land use issues do you face related to congestion plans?

STATE RESPONSES

Alaska

How Does Your Statewide Plan Address Congestion?

Congestion is an element of the system management and operation portion of the statewide plan. The discussion focuses on the state's role in transportation and land use planning and decisions as a means to strategically deal with congestion. The plan recommends more ongoing emphasis on developing and coordinating statewide congestion mitigation policy and programs.

It is a substantive issue primarily in Anchorage, and congestion mitigation is both a key operating issue within the Anchorage MPO and an important element of the Anchorage Long-Range Transportation Plan.

What Performance Measures Are Used to Describe the Congestion Problem and the Effect of Congestion-Related Projects?

The statewide plan does not include performance measures related to congestion. The Anchorage MPO measures LOS and delay at intersections and on arterials in order to quantify the effects of congestion, help prioritize proposed projects and measure the impacts of completed projects.

How Does Your Plan Address Funding and Implementing Congestion-Related Projects?

The plan recommends modification of our project evaluation criteria to give more weight to projects that will reduce documented congestion.

What Is the Relationship Between Capital and Operations Approaches to Congestion in Your Plan?

Both are encouraged; there is not a defined relationship.

What Intergovernmental Relations Issues Are You Facing Related to Congestion? (City/Suburb, Urban/Rural, State/MPO, etc.)

The primary intergovernmental relation issues are between the Municipality of Anchorage (the only local government in the Anchorage MPO) and the state. The municipality recently completed a new comprehensive plan, and the MPO's long-range transportation plan will function as the transportation element of the comprehensive plan. The MPO is currently absorbed with three projects that are being developed as congestion-reducing improvements. More emphasis and energy needs to be placed on renewing the entire long-range transportation plan in order to better gauge the amount of improvement various congestion-reducing strategies can provide, and to prioritize both construction and operational improvements.

What Land Use Issues Do You Face Related to Congestion Plans?

Regulation of land use is, by Alaska law, the jurisdiction of local government. With the development of the new Anchorage Long-Range Transportation Plan, we intend to include iterative consideration of both transportation improvements and land use (zoning) changes to reduce congestion and to improve LOS on arterial routes.

California

How Does Your Statewide Plan Address Congestion?

1. The draft CTP explores many of the causes of congestion then offers policies and strategies to address current and future demand, including:
 - a. Increasing capacity on all modes;
 - b. Improving connectivity among modes and jurisdictions;

- c. Making alternative modes more convenient and attractive;
- d. Improving system management through various means, including new technology;
- e. Improving integration of land-use and transportation planning; and
- f. Performance measures (mobility, reliability, accessibility).

What Performance Measures Are Used to Describe the Congestion Problem and the Effect of Congestion-Related Projects?

- 1. Performance measures for congestion include:
 - a. Mobility (travel time delay),
 - b. Reliability (variability of travel time), and
 - c. Accessibility (travel time to desired destinations).

How Does Your Plan Address Funding and Implementing Congestion-Related Projects?

- 1. The draft CTP is a policy plan that advocates the flexibility of transportation revenue expenditures. Flexibility will allow jurisdictions to consider multimodal solutions for transportation challenges.
- 2. Once approved, the final CTP will serve as a guide for long-range transportation planning in the state by the department and other transportation entities.

What Is the Relationship Between Capital and Operations Approaches to Congestion in Your Plan?

- 1. California will need to increase transportation system capacity to help provide for the increased demand anticipated because of projected population growth and changing travel behavior. However, capacity increases alone will not meet the demand.
- 2. The draft CTP offers operational strategies including improved system and demand management, resolving “bottleneck” areas, improving traffic flows and providing viable transportation choices.
- 3. The draft CTP recognizes the need for a balanced transportation system where capital projects and operational improvements along with other alternative strategies must be evaluated and identified to manage current and future congestion

What Intergovernmental Relations Issues Are You Facing Related to Congestion? (City/Suburb, Urban/Rural, State/MPO, etc.)

- 1. Cities and counties make local land use decisions while state and regional agencies make transportation decisions. There is a need for better coordination between these decision-makers.
- 2. Lack of affordable housing has resulted in long commutes crossing jurisdictional boundaries and creating job–housing imbalance with substantial congestion on interregional roadways.
- 3. Transportation needs of urban and rural areas are different.

4. Goals of the state, regions, and various levels of governments are not always in harmony for congestion management, and large interregional projects require cooperation and funding from multiple sources to ensure completion.

What Land Use Issues Do You Face Related to Congestion Plans?

1. Transportation planning and programming in California is a complex process shared among multiple public and private entities and regulating agencies.
2. Growth in the form of low-density land use leads to urban sprawl resulting in increased traffic congestion and commute time.
3. Land use and development decisions are often revenue driven leading to development in areas with inadequate supporting transportation infrastructure.
4. Local zoning ordinances promote single use rather than mix use and isolation of employment, shopping, services, and housing location.
5. Residential development patterns discourage walking and biking, and are difficult to serve by transit.
6. Employment centers have moved from the central city to the suburbs and edge cities that promote suburb-to-suburb-to-suburb travel leading to increased congestion.

Florida

How Does Your Statewide Plan Address Congestion?

The 2002 short-range component of the 2020 FTP explains that the transportation system must be managed to maximize its efficiency in moving people and goods. It states that this can be accomplished by improving the operation of existing and new facilities, managing access to major transportation facilities so they can better serve their intended functions, and improving our responses to emergencies, crashes and other incidents.

The short-range component also explains that providing mobility—meeting Floridians’ need to move people and freight—is transportation’s most essential function. From a commuter’s perspective, mobility is best described in terms of the time and expenses associated with the trip to work. For transit users, it is primarily the ability to reach a destination at the desired time at a reasonable cost. For the shipper, mobility best relates to the time, cost, and reliability of delivery services. The plan notes that commerce suffers when congestion and inadequate links between the modes of transportation create costly delays. It also points out that lower income Floridians cannot fully participate in the state’s prosperity when a lack of transportation options isolates them from jobs and economic opportunities. [See pp. 11–27 of the 2002 short-range component, which is available on Florida’s website at: www11.myflorida.com/planning/policy/pdfs/src.pdf (pdf file; 3049 KB).]

What Performance Measures Are Used to Describe the Congestion Problem and the Effect of Congestion-Related Projects?

The 2002 short-range component includes three short-range objectives that relate to mobility. They are

- Through 2007, at a minimum, maintain the rate of change in person hours of delay on the FIHS.
- Through 2011, commit approximately 50% of the highway capacity improvement program for capacity improvements on the FIHS.
- Through 2011, increase transit ridership at twice the average rate of population growth. See pp. 18–27 of the 2002 short-range component, which is available at www11.myflorida.com/planning/policy/pdfs/src.pdf (pdf file; 3049 KB).

Mobility cannot be adequately explained with only one measure. As a result, four dimensions of mobility have been defined and a series of measures for each dimension have been developed. They are

- Quantity of travel:
 - Person miles traveled,
 - Truck miles traveled,
 - VMT, and
 - Person trips;
- Quality of travel:
 - Average speed,
 - Delay,
 - Average travel time, and
 - Average trip time;
- Reliability:
 - Maneuverability,
 - Accessibility,
 - Connectivity to intermodal facilities,
 - Dwelling unit proximity,
 - Employment proximity,
 - Industrial/warehouse facility proximity,
 - Percent miles with bicycle accommodations, and
 - Percent miles with pedestrian accommodations;
- Utilization:
 - Percent system heavily congested,
 - Percent travel heavily congested,
 - Vehicles per lane mile, and
 - Duration of congestion.

Please see page 3 of the document titled “Florida’s Mobility Performance Measures Program,” which is available on the department’s website at www11.myflorida.com/planning/statistics/mobilitymeasures/mmbrochure.pdf (pdf file; 152 KB). The department is continually working to improve these measures.

The department recognizes that it is unlikely that congestion can be reduced in many areas of the state. However, improvements in system reliability are possible and new ways of addressing congestion are being explored. The development of a strategic intermodal system is one way the mobility of people and goods is being addressed on a statewide multimodal and intermodal basis.

In the future, the department will be working to include in the short-range component a mobility measure for nonurban areas and outcome oriented measures that relate to the deployment of ITS technologies.

How Does Your Plan Address Funding and Implementing Congestion-Related Projects?

The 2002 short-range component establishes the policy direction for the department. Work program instructions are developed consistent with the policy guidance provided in the 2002 short-range component. The districts, in accordance with the work program instructions, then program projects.

The FIHS is a 3,834-mi statewide interconnected network of limited and controlled access roadways. It provides for high-speed and high-volume traffic movements within the state. While the department coordinates closely with all local governments affected by projects on the FIHS, it is the department's responsibility to ensure the FIHS serves its intended function. The department is responsible for planning and programming projects for the FIHS.

Projects planned for the State Highway System that are not also on the FIHS must be included in the affected local government's comprehensive plan before they will be added to the department's work program.

In order to identify and help prioritize areas on the FIHS in need of capacity improvements, the department has an objective, interactive geographic information system (GIS) analytical tool for determining the ranking and relative priority of highway segments on the FIHS. This decision support system is a quick-response system controlled by managerial end users to directly support the decisions and the needs of transportation professionals. An analysis can be performed with a combination of six factors and three parameters. Factors are Capacity, Safety, Pavement, Freight, Intermodal Connectivity and Economic Development. Parameters are Analysis Year, work program data and future traffic data sources. The department monitors traffic volumes at least annually at over 7,300 locations, and classifies vehicle types at nearly 2,300 of these. In addition, the department operates nearly 290 telemetered traffic monitoring sites that allow it to measure traffic volumes 24 h/day, 365 days a year. Besides traffic volumes, more than 230 of these continuous sites measure speeds, about 200 collect speed and vehicle classification data, and 35 collect weight data as well as speed and classification.

In our 2020 Revenue Forecast Update, approximately 48% of the total federal, state, and turnpike funds are applied to capacity products and services. Within the capacity programs, 19% of the funds are for construction and ROW for state highways that are on the FIHS and 17% of the funds are for construction and ROW for other state highways, which includes congestion mitigation.

The process of setting priorities and distributing the capacity programs is more complex than for noncapacity programs. Funding is distributed based on needs and formulas. The "needs" are what "needs" to be done, based on data, measures, plans, and studies, etc. The formulas are generally based in law and are used to distribute funds based on measures of equity to Florida DOT districts, major airports or transit systems, etc. After the "equity" distributions are made using formulas, the "needs" are generally taken into account in establishing "what will be done first" by the districts. Measures used to determine needs include quantifying measures, such as the number of accidents, congestion, etc. Other measures may include connectivity to other roads to create more direct routes, avoiding dramatic changes in the number of highway lanes, access to major airports, seaports, or other major traffic generators.

With changes in federal funding, the intermodal access program and the commitment of 50% of the highway capacity improvement program to the FIHS may change.

What Is the Relationship Between Capital and Operations Approaches to Congestion in Your Plan?

As discussed in the first question, the department is actively involved not only in expanding the capacity of the State Highway System but also in ensuring the existing system operates as efficiently as possible. Operational issues (maximizing the existing capacity of a roadway through implementation of ITS technologies and traffic operations improvement) are addressed in strategic goal 1 of the 2002 short-range component. Capital issues (physical expansion of the system) are addressed in strategic goal 2 of the 2002 short-range component.

The department is developing ITS corridor concept plans for the five principal expressway corridors in the state: I-75, I-95, I-10, I-4, and Florida's Turnpike. ITS projects are under construction and planned throughout the state.

The department routinely constructs turn lanes, revises median openings and designs, improves traffic signalization and signal systems, and makes other improvements to the operation of state highways and affected local government roads. Further, the department works with local governments and other partners to encourage the use of transportation demand management techniques such as bicycle and pedestrian programs, transportation management organizations, commuter computer matching and ridesharing, car and van pooling, park-and-ride lots, transit, commuter rail, telecommuting, alternative work hours, trip reduction ordinances, congestion pricing and other ways that reduce peak-hour demand on roadways.

What Intergovernmental Relations Issues Are You Facing Related to Congestion? (City/Suburb, Urban/Rural, State/MPO, etc.)

The department sets LOS standards for FIHS facilities. These standards are sometimes compromised in urban areas, where the FIHS facility is used as a local commuter route in addition to its intercity long-distance function. Thus, the department is faced with improvement costs on a statewide facility to solve a local congestion problem.

The state has a concurrency management system, which is designed to ensure that needed infrastructure is in place when development occurs. There are several exceptions that are allowed based on demonstrated good planning techniques, which reduce automobile trips. These are implemented on a local level and then approved at a state level. Sometimes these exception areas affect a neighboring governmental unit that has no jurisdiction on this exception area. Also these local governments may use differing standards and methodologies in determining the impact of these exception areas. This can lead to conflict at a regional level. This also can put the department in an awkward position.

What Land Use Issues Do You Face Related to Congestion Plans?

Most metropolitan congestion management plans deal with spot improvements along major arterials, which improve the operation of the identified arterial. Because the process is focused on improving transportation system efficiency, the underlying land use issues are accepted as given.

Though newer regulations and planning tools do a better job at integrating land use and transportation, many older developments that are not built, or are not fully built out, have vested rights to specified numbers of trips on the state and local transportation system. These can then prevent additional or infill development along these facilities. This can induce sprawl as later development locates further out from the urban center in order to not cause the facility to fail or to avoid impact fees for facility improvements. In addition, it is not always clear who has the responsibility for mitigating resultant land use impacts on the transportation system. Local governments may negotiate community wide capital improvements for large-scale development under the Development of Regional Impact (DRI) program. The authority for the DRI program comes from state statutes and is a key component of Florida's growth management system. Under this program a local government may negotiate to mitigate a proposed development's impact for capital infrastructure items such as schools, libraries, police, and fire facilities as well as transportation infrastructure. Impacts on the local and regional transportation system are calculated according to the type and intensity of the development. Often transportation funds allocated to offset the proportionate share impact to an individual road are pooled together and pipelined into a single project in order to facilitate more immediate construction.

The state has an excellent access management program, which aids in alleviating some of the congestion on arterials. Some local governments have developed access plans along arterials, which improve the operation of the arterial. However, governmental approaches to control driveway access sometimes results in lawsuits. The following links to the Florida DOT's website relating to access management: www11.myflorida.com/planning/systems/sm/accman/default.htm.

On another note, the state has developed an Areawide Multimodal Level of Service Handbook, which provides a good model for integrating land use, and transportation, which can reduce congestion at a local area level. The following links to the Florida DOT's website relating to LOS: www11.myflorida.com/planning/systems/sm/los/default.htm.

Documents Discussed in This Summary and Their Internet Links

- 2002 short-range component of the 2020 FTP:
www11.myflorida.com/planning/policy/pdfs/src.pdf (pdf file; 3049 KB).
- 2002 short-range component, Plan-in-Brief:
www11.myflorida.com/planning/policy/pdfs/src_brochure.pdf (pdf file; 516 KB).
- 2020 FTP:
www11.myflorida.com/planning/2020ftp/FTP_final.pdf (pdf file; 7347 KB).
- Access Management:
www11.myflorida.com/planning/systems/sm/accman/default.htm.
- Financial Planning Process:
www11.myflorida.com/programdevelopmentoffice/process.pdf (pdf file; 189 KB).
- Florida's Transportation Tax Sources: A Primer:
ombnet.dot.state.fl.us/financialplanningoffice/Tax%20Primer%20JAN-2002%20Update%20REC%20061402.pdf (pdf file; .6 MB).
- LOS:
www11.myflorida.com/planning/systems/sm/los/default.htm.
- Long-Range Program Plan:

This document is not available on the Internet. A copy of the complete document with a

summary of performance measures included in the Long-Range Program Plan can be obtained by contacting Dan Cashin by e-mail: Daniel.Cashin@dot.state.fl.us or by phone: 850-414-4818.

- Mobility Performance Measures:

www11.myflorida.com/planning/statistics/mobilitymeasures/mmbrochure.pdf (pdf file; 152 KB).

- Program and resource plan:

www11.myflorida.com/programdevelopmentoffice/Program%20and%20Resource%20Plan%20Document.htm.

- Revenue Forecast Handbook:

www11.myflorida.com/planning/policy/pdfs/RevHandbk.pdf (pdf file).

Michigan

How Does Your Statewide Plan Address Congestion?

The state LRP contains goals, objectives, and strategies that will be used to address congestion. The transportation strategies are designed to address the issues that have been identified as part of our evaluation of our current transportation system and forecasted trends. These strategies are based on factors such as input from our customers, our knowledge of best practices and the ability to customize the strategy according to the varying needs that exist across Michigan. For example, some strategies are most applicable in urbanized areas, while others are crucial to achieving our goals statewide. The strategies are presented by mode, although some may apply to more than one mode.

The plan contains a discussion on how Michigan DOT monitors the potential need for added capacity on the state trunkline system through two processes. First, we monitor the overall operation of the roadways through the use of average daily, peak hour, and commercial traffic monitoring; crash data; and system condition data for current deficiencies. Travel demand forecasting models are employed to assess where future system deficiencies will occur, based on future population and development trends. Second, we receive direct input, such as from the traveling public, local units of government, legislators acting for constituents, and private sector developers whose plans impact existing roadway.

These inputs are analyzed against actual system operation. If priority deficiencies are identified, the results of the analysis move forward in the project development process. Priority deficiencies include those within the corridors of highest significance and other NHS routes. Corridor and freeway studies are conducted to determine the severity and extent of capacity deficiencies on existing highways. The studies develop potential alternatives and coordinate connectivity, intermodal and capacity improvements with pavement and structure rehabilitation. Actions to be considered include changes in the transportation system by providing added capacity, utilization of ITS, and changing the characteristics of demand. Changing the characteristics of demand can include actions that result in increased use of public transit and ridesharing.

In the baseline chapter of the plan we provide detailed information about current and projected traffic trends. It identifies the percent of all state trunkline annual VMT under congested conditions projected to grow between 2000 and 2025. For the four major Interstate freeways at the top of our corridors of highest significance ranking.

Corridors of Highest Significance A major theme related to congestion management is the strategy for corridors of highest significance, which includes a discussion about the need to add capacity—lanes—along the identified corridors. Our bridge widening or lengthening strategy, which is a part of our asset management implementation, provides another essential element in the management of congestion for the corridors of highest significance.

Whether along the corridors of highest significance or other state trunkline highways, Michigan DOT's strategy for congestion management includes working on an inventory of corridor strengths and deficiencies for infrastructure development, building a sense of common interest along the corridor, creating a forum that fosters economic development opportunities, pursuing physical transportation improvements and enhancements and facilitating international trade.

Our strategy places priority on the freeway system to meet the traffic forecast to the year 2025. Elements for consideration include safety, interchange reconstruction, ROW requirements, environmental impacts, and the cost of disruption to traffic and business during construction. At the same time, as each road or bridge project is developed, alternatives to alleviate or manage congestion are considered.

The congestion management strategy aims to enhance mobility, a component of the LRP goal of basic mobility.

Freeway Modernization Strategy Michigan DOT's freeway modernization strategy is a continuing commitment to apply up-to-date design standards and new technology when rebuilding freeway facilities or when designing new facilities. It includes the application of new technology such as weigh-in-motion programs for commercial traffic and ITS applications such as changeable message signs, video monitoring of freeways for incidents, and ramp metering to help maintain steady rates of traffic flow at interchanges.

Access Management Strategy Access management is a coordinated plan and review process requiring a cooperative effort between Michigan DOT and local governmental agencies that provide or manage access to land development while simultaneously preserving the flow of traffic—mobility—on the surrounding road system.

Interchange Strategy Improvements to existing interchanges and construction of new interchange projects are selected in response to traffic needs on a statewide priority basis and require local coordination and a concurrent local commitment to widen the local road as necessary.

Local authorities may choose to widen the local road at an interchange to attract development even though current traffic volumes do not warrant such improvement. Such improvements may also require improvement to state highway interchange ramps. Interchange improvements prompted by locally encouraged and approved developments are the financial responsibility of local authorities. This type of project is not part of the Michigan DOT project selection process, but does require coordination with Michigan DOT.

The local agency and/or private sector developers are responsible for all costs associated with a new interchange necessitated by private sector development including grade separation structures, ROW improvements, and approach work. An exception to this policy is granted in cases where Michigan DOT has determined that reduction in existing congestion at adjacent trunkline interchanges can be reasonably expected and where FHWA justification criteria

warrant an additional break in access. In such cases, Michigan DOT may assume costs for structures and ramps only.

ITS Strategy Michigan DOT will use technology to address transportation congestion and safety issues in the state. Steps are being taken to integrate ITS into Michigan DOT's overall transportation planning process.

Michigan DOT plans to use traveler information systems to improve freeway operations as a part of freeway modernization. The LRP lays out some specific steps in the development of ITS on the freeway system.

The process of blending high technology into solutions to transportation problems in an intermodal context is already occurring. Ongoing partnerships with the University of Michigan and Michigan State University support research and evaluation efforts to identify promising uses for ITS technology throughout the state.

Michigan DOT, with support from FHWA, is also initiating a unique program of developing an ITS test bed in Michigan. The program offers an opportunity to private industry to partner with Michigan DOT in testing their products, services, concepts and research in Michigan as a "live laboratory" utilizing our transportation infrastructure. The goal is to improve transportation services in the state, create high tech jobs that complement our auto manufacturing industries, and improve the economy.

Other congestion management strategies included that focus of the distinct mobility issues and these are

- Truck-related highway strategies. Capacity improvements to reduce congestion, eliminate choke points, and modernize the highway system will improve conditions for trucks.
- New technologies. Use of new technology such as weigh-in-motion, the Commercial Vehicle Information System Network (CVISN) and video monitoring of freeways for incidents should improve the free flow of trucks, improve safety, and eliminate bottlenecks.

What Performance Measures Are Used to Describe the Congestion Problem and the Effect of Congestion-Related Projects?

Michigan DOT has organized the performance measures into three categories:

1. System condition;
2. Accessibility, mobility, and safety; and
3. Operational and service performance.

These categories and the individual performance measures relate either directly or indirectly to the state LRP goals as follows:

- System condition performance refers to the physical condition of the transportation asset, whether the asset is a highway, bus fleet, rail line, bus terminal, port, or airport. System condition measures:
 - Customer satisfaction survey,
 - Pavement/runway condition,
 - Bridge condition,

- Bus fleet condition, and
- Intermodal facility condition.
- Accessibility, mobility, and safety performance refers to monitoring how frequently the transportation service is offered, how efficiently it operates, and how many accidents are taking place. For highways, it answers the question: how congested is the system? Accessibility, mobility, and safety measures:
 - Customer satisfaction survey,
 - Crash rates and trends,
 - LOS,
 - Portion of system with seasonal load restrictions,
 - Percent of population served—transit ridership, and
 - Airports with adequate primary runway system.
- Operational and service performance relates to how well the transportation system is meeting the needs of the traveling public. Travel time, delay, congestion, system usage, costs, and facility access are some of the measures used to determine operational and service levels. Operational and service measures:
 - Customer satisfaction survey,
 - LOS,
 - Percent of population served—transit ridership,
 - Number of buses eligible for replacement and the percent unfunded,
 - Passenger terminals served by two or more modes, and
 - Airports with all weather access.

How Does Your Plan Address Funding and Implementing Congestion-Related Projects?

Michigan has a host of needs, but we cannot afford to buy everything. It is imperative that we have the right set of program policies and strategies in place as we set priorities for the system.

High Capital Intensive Projects Through the state’s long-range process we identified corridors of highest significance. These corridors show where the most critical movement of goods and people occur. These corridors were identified based on multimodal criteria and threshold values. We combined this information with system, facility, and usage data that pinpointed four corridors, containing major five projects, where additional capacity is required. The five projects are

1. I-94 from I-96 to Connor, through downtown Detroit;
2. I-75 from I-696 to M-59, north of Detroit;
3. US-23 from M-14 to I-96 in the cities of Ann Arbor and Ypsilanti;
4. US-31 from I-196 to I-96, Holland to Grand Haven, on the west side of the state; and
5. I-94 from US-131 to Sprinkle Road, Kalamazoo in the southwest area of the state.

Design work for these projects was included in the Governor’s *Build Michigan III* transportation package for economic development, congestion relief, and safety needs. These projects do not represent the list of necessary capacity priorities through 2025. Currently, the resources for the construction phases of these projects has not been identified. Nevertheless, they are our most immediate focus for capacity improvements.

Over the past year, Michigan DOT has also been developing a Toolbox for Funding Large Highway Projects. The toolbox provides a historical and statutory context to the issue of financing large projects and then evaluates the strengths and weaknesses of various revenue, finance, and project delivery options. It will include ideas to help local governments finance some of their own large projects or facilitating local cross-jurisdiction projects that coordinate with or capitalize on work being done by the state.

Less Capital Intensive Projects Michigan DOT employs a business model that enables us to extract as much value as possible from our transportation dollars, while meeting the needs of the system. Some of the highlights of this model are

- Development of the 5-year road and bridge program: provides program stability;
- Call for projects based on asset management: we pick the right “mix of fixes;” and
- Program level investment analysis: ensures the right program size, given the funding amount.

However, these only allow us to deal with our less capital intensive capacity increasing jobs.

What Is the Relationship Between Capital and Operations Approaches to Congestion in Your Plan?

Michigan DOT is moving from a day-to-day focus on the capital side of our business to integrating the way we maintain our system in a holistic fashion. This is being done using a continuous assessment of the system’s performance, collecting the appropriate data, thinking more strategically, using technology and analytical tools pro-actively and monitoring our results. (Note the discussion under How Does Your Statewide Plan Address Congestion?)

We identify and employ a full range of lower capital operational improvements for managing congestion and preserving our basic mobility before considering capacity adding high capital intensive improvements. Our congestion management strategy includes application of new technologies and ITS applications, access management, system modernization, bridge widening and lengthening, and interchange improvements.

What Intergovernmental Relations Issues Are You Facing Related to Congestion? (City/Suburb, Urban/Rural, State/MPO, etc.)

Funding and Competition for Resources One overriding issue is not enough money with many competing interests. Not unique to Michigan, the requests for capacity and reconstruction projects exceeds our financial resources and the needs continue to grow. The competing interests are always concerned about how the money will be spent and who will be the major beneficiaries: the east side of the state versus west, the upper peninsula versus the lower peninsula, central city or suburbs, or local agencies with responsibilities for transportation versus the state. Equity issues are paramount.

Identifying and gaining support and approval for additional transportation resources can also be a sticky issue. A 4-cent gasoline tax hike package in the late 1990s was criticized by some. They questioned raising taxes and how the money was to be shared among agencies.

Critics also oppose any use of general fund/general purpose (GF/GP) monies for roads; they point out that many important programs have no source of funds other than GF/GP, whereas roads receive revenues dedicated solely to that purpose. They further disapprove of engaging in long-term borrowing to fund road improvements, which they equate to the state's getting a credit card and making future generations pay off the debt.

Supporters contend that long-term debt is appropriate in this instance because future generations will benefit greatly from the projects, which were carefully selected to address safety, congestion, and economic development, because they will serve the state for 100 years. Local road agencies worry that some of the money needed to repay the bonds could be diverted from road maintenance and construction.

Organizations such as the Southeast Michigan Council of Governments (SEMCOG) and the Michigan Road Builders Association (MRBA) say revenues are insufficient to meet growing needs. SEMCOG predicts that by 2025, the metropolitan Detroit area alone will have a \$17-billion shortfall in meeting its transportation needs, which include public transit and rail as well as roads.

Many are concerned about any emphasis on expanding the highway system to the detriment of repairing roads.

Other organizations are concerned about public transit, and they recommend increasing and stabilizing transit funding. We have a serious, ongoing debate within the state about the balance between highways and transit and over how to fund a regional transit organization in southeast Michigan.

Transportation, Land Use, and Local Control Intermodal Surface Transportation Efficiency Act of 1991, TEA-21, and Clean Air Act requirements require linking land use, transportation, and air quality planning. Land use decision making in Michigan is fragmented. Although there is some state involvement, local jurisdictions have very wide latitude. Urban sprawl, encroachment on farmlands, and unrestricted development in rural areas are confronting our cities, counties, and state and contribute to the strain on our transportation system are all major issues. Instituting smart growth/growth management techniques as a method to stabilize and/or reduce transportation demands faces major challenges.

More than 1,800 units of local government have legal authority to engage in land use planning and/or zoning in Michigan; in most states, only 300 to 500 locals have such authority. Moreover, there is little coordination within units of government (for example, only 24 of the 83 counties have countywide zoning ordinances) or among them conflicts often arise between neighboring jurisdictions. In addition, certain public buildings (e.g., corrections, foster care, and education facilities) do not necessarily need to comply fully with local zoning regulations. All this has an impact on the transportation system and can be a source of choke point and corridor congestion.

Although traffic volume has increased 30% since 1991 and capacity only 3%, critics question the wisdom of taking on any expansion projects before fixing deteriorating roads. (The Michigan DOT's current programs focus on fixing the worst roads first, with a goal of bringing 90% of state roads to good condition by 2007.) Environmental organizations fear that capacity improvements or expansions will widen urban sprawl by leading to more development in rural areas.

What Land Use Issues Do You Face Related to Congestion Plans?

Michigan DOT is severely limited in the ability to influence land use. Michigan DOT uses an access management coordinated plan and review process in cooperation with the local units of government to reduce curb cuts and preserve capacity on the system. Working with the Michigan Society of Planning, a number of workshops were conducted to educate local officials and agencies on access management techniques. All of these efforts are voluntary and success depends on the willingness of local officials to apply what they learn by implementing local zoning and development requirements that preserve road capacity in growing areas.

Preservation of ROWs is another issue that we face. Michigan DOT works with local agencies to preserve, protect and/or provide ROW as needed. For capacity increasing projects that are requested by our local constituents we request that they provide the ROW as a condition for the project to move forward.

In addition we sometimes face opposition to capacity increases in some areas because of local and regional opposition to urban sprawl.

Also, refer to part 2 of the response to the question: What Intergovernmental Relations Issues Are You Facing Related to Congestion?

Minnesota*How Does Your Statewide Plan Address Congestion?*

Moving Minnesota 2003, the DRAFT Minnesota STP is a plan that contains 10 policies that address Minnesota's transportation systems. Two policies relate directly to congestion they are as follows:

- Policy 5—Enhance mobility in interregional transportation corridors linking regional trade centers (RTCs); and
- Policy 6—Enhance mobility within major RTCs.

An additional policy has a less direct but still obvious link to congestion:

- Policy 3—Effectively manage the operation of existing transportation systems to provide maximum service to customers.

Each policy contains outcomes, performance measures, and performance targets that will measure our progress towards the policy goal.

What Performance Measures Are Used to Describe the Congestion Problem and the Effect of Congestion-Related Projects?

See the Minnesota Performance Measure Matrix in Appendix B.

How Does Your Plan Address Funding and Implementing Congestion-Related Projects?

Moving Minnesota 2003 is a nonfiscally constrained performance-based plan. It sets the performance framework by which the gap between projected performance and desired performance can be identified. This holds true for congestion related issues. Implementation and funding of congestion-related projects takes place in the district planning process.

What Is the Relationship Between Capital and Operations Approaches to Congestion in Your Plan?

Moving Minnesota 2003 states that “MnDOT will maximize the remaining capacity of existing transportation infrastructure and services through proper design, construction, operations, maintenance, and system management.” This is an operations approach to congestion that is generally utilized before strategies such as capacity expansion and bottleneck removal.

What Intergovernmental Relations Issues Are You Facing Related to Congestion? (City/Suburb, Urban/Rural, State/MPO, etc.)

Each year there is a legislative struggle for transportation funding between Greater Minnesota and the Twin Cities metropolitan area. The Twin Cities experience daily congestion problems while rural Minnesota does not. During this past session some lobbying groups advocated postponing any transportation funding package until the next legislative session (due to redistricting it was expected that the Twin Cities would have a greater advantage over Greater Minnesota).

What Land Use Issues Do You Face Related to Congestion Plans?

Continued expansion (sprawl) of the Twin Cities metropolitan area creates long commutes and more travel demand on the Metro freeway system. The Twin Cities Metropolitan Council has attempted to control sprawl through a number of measures including establishing a Metropolitan Urban Service Area boundary, beyond which they will not provide sewer and water service. They have had little success.

Another, more specific, land use issue that relates directly to congestion is the issue of access. It is often a struggle to balance a community’s right to economic development, and the needed access to the highway system, and the congestion issues that that access creates. Policy 2 in *Moving Minnesota 2003* addresses this issue and contains performance measures and targets that will encourage a balance between access and mobility.

Ohio

How Does Your Statewide Plan Address Congestion?

Congestion is viewed as being location specific and is incorporated as one of the performance measures and other factors used to prioritize among needs. Reducing congestion is also viewed as a goal within the statewide plan.

What Performance Measures Are Used to Describe the Congestion Problem and the Effect of Congestion-Related Projects?

Ohio DOT uses a variety of measures to calculate or define congestion. Volume to capacity (V/C), minutes of delay, and LOS are all used. The LOS and V/C defined as congestion is different in urban and in rural areas and on the suburban fringe.

How Does Your Plan Address Funding and Implementing Congestion-Related Projects?

Ohio DOT makes every effort to develop/prepare financially constrained plans. As funding projections identify the availability of monies, the performance measure “goal” changes proportionately.

What Is the Relationship Between Capital and Operations Approaches to Congestion in Your Plan?

Ohio DOT has declared congestion an initiative for Fiscal Year 2003. We are in the process of developing a statewide congestion strategy to identify both operational and capital programs and policies for both reoccurring and accident related congestion. As with all initiatives, a multidisciplinary team spends approximately 1 year focusing on how best to approach each issue. The recommendations are then incorporated into the statewide plan.

What Intergovernmental Relations Issues Are You Facing Related to Congestion? (City/Suburb, Urban/Rural, State/MPO, etc.)

In the past, none of the state’s 16 MPOs and the state used the same measurement to define congestion. In FY 2001, a committee was formed to agree on one definition for congestion for the state. All agreed on the LOS for major urban (3 urban areas over 1 million), medium urban, small urban, and rural, and all agreed how to develop long-term projections. Also, as a home rule state, Ohio DOT has been trying to make the cities aware of their responsibilities in terms of managing congestion.

What Land Use Issues Do You Face Related to Congestion Plans?

As a home rule state, Ohio DOT’s role in land use issues is advisory. During the past year Ohio DOT has developed training materials and undertaken a major training program to teach access management to our districts and local governments throughout Ohio. It is hoped that this “bottom-up” education will result in the local governments approaching the legislature to make access management a statewide policy for Ohio DOT.

Texas

How Does Your Statewide Plan Address Congestion?

The current statewide plan addresses congestion only as a topical discussion. The statewide plan is not project specific. Other documents address congestion on segments of the corridors and on individual project specific proposals for improvement.

What Performance Measures Are Used to Describe the Congestion Problem and the Effect of Congestion-Related Projects?

Performance measures are not currently used; consideration of use will be given to future updates of the statewide plan.

How Does Your Plan Address Funding and Implementing Congestion-Related Projects?

The statewide plan does not address funding and implementing of individual congestion-related projects. Project specific issues are managed through the STIP and UTP.

What Is the Relationship Between Capital and Operations Approaches to Congestion in Your Plan?

Since the statewide plan is not project specific, relationships between capital and operations approaches to congestion are not addressed in the statewide plan.

What Intergovernmental Relations Issues Are You Facing Related to Congestion? (City/Suburb, Urban/Rural, State/MPO, etc.)

Texas DOT is currently addressing intergovernmental relations issues related to congestion and funding through its ongoing UTP revision process. Outreach programs have been conducted across the state and work groups are in progress to identify corridor development needs and funding priorities. The work groups are comprised of representatives from elected officials, RPOs, MPOs, and Texas DOT staff.

What Land Use Issues Do You Face Related to Congestion Plans?

At the current time, all land use issues are addressed at either the MPOs, regional planning commissions, or at the local level.

Washington

How Does Your Statewide Plan Address Congestion?

Washington's Transportation Plan (WTP) is the state's 20-year multimodal plan to implement programs and budget development. The 2003–2022 update of the WTP contains an overview of the

current conditions facing the statewide transportation system; an assessment of the state's transportation investment needs for the next 20 years; and a statewide policy for transportation. The WTP also fulfills the requirements of state and federal law. This plan has multiple subplans or system plans that directly address the needs of specific modal elements.

Included in the state's system plan is the Washington State HSP, which directly addresses congestion through congestion relief strategies detailed in the plan. Strategies are based on both operational and capital enhancements to improve the mobility of both people and freight. These congestion relief strategies include

- Reduce person and freight delay on corridors;
- Improve existing travel options;
- Create links and remove barriers between transportation facilities and services; and
- Support statewide economic development through targeted transportation investments.

The range of strategic improvements includes

- Completing the remaining 106 mi of the Puget Sound Core HOV system;
- Reducing travel delay along fully developed corridors by improving efficiency and utilizing access management techniques;
- Improving connections at multimodal transportation facilities;
- Constructing periodic passing or climbing lanes where slow moving vehicles impede the general mobility within state and regional corridors; and
- Widen highways, where appropriate and in consideration with other congestion strategies.

What Performance Measures Are Used to Describe the Congestion Problem and the Effect of Congestion-Related Projects?

In December 2001, the Washington Transportation Commission adopted for Washington State DOT several important principles for new approaches to measuring the extent of congestion and the progress to be made toward finding solutions.

The new principles include

- Use real-time measurements (rather than computer models) whenever possible.
- Measure congestion due to incidents as distinct from congestion due to inadequate capacity.
- Show the extent that reducing congestion caused by incidents will improve travel time reliability.
- Demonstrate both long-term trends and short-to-intermediate term results.
- Communicate about possible congestion fixes using an “apples-to-apples” comparison with the current situation (for example, if the trip takes 20 min today, how many minutes shorter will it be if Washington State DOT adds a freeway lane or improve the interchanges?).
- Use plain English to describe measurements.

Washington State DOT will concentrate particularly on reporting the effectiveness of the congestion relief programs in support of travel time reliability and system efficiency. Travel time

reliability is of utmost importance to the public. This is verified through opinion surveys, which show predictability and reliability are of even greater concern to the public, than the travel time itself. (4)

In mid-May, Washington State DOT's website began to post real travel times updated every few minutes as compared to average expected travel times, for 11 prominent commutes on major urban freeways. Forthcoming measures will focus on the issues of reliability.

Washington State DOT distributes a quarterly performance measures report called the Gray Notebook (www.wsdot.wa.gov/accountability/default.htm). The most recent Gray Notebook, distributed March 31, 2002, contains discussions describing congestion and the development of new performance measures to analyze the effect of congestion relief related projects.

An update of the current HSP will incorporate the new principles of congestion measurement mentioned above. Although the current WTP discussed congestion and used the two performance measures (5), as mentioned above, Washington State DOT has changed its emphasis away from these type of measures that do not adequately take into account congestion relieving measures and issues like ramp metering in peak hours; incident response teams; signal timing; and recurrent congestion versus non-recurrent congestion.

How Does Your Plan Address Funding and Implementing Congestion-Related Projects?

Selecting highway improvements for Washington State DOT's biennial budget has changed in recent years. While a priority programming process still directs funding toward projects, improvements were previously identified within the financially constrained HSP in order to be eligible for the priority programming process.

1991–2001 The Transportation Commission adopted 10 service objectives that describe the services to be provided by the state highway system. These service objectives provided the framework for defining the 20-year needs of the state highway system. An estimated cost to meet these needs was calculated and compared to the available revenues over the same period, assuming that past trends in highway funding would continue at the same rate of increase. Even if historical revenue trends continued, many mobility needs would not be met. Without continuing funding increases, no mobility needs would be met.

Because of the disparity between highway needs and revenues, the commission had to decide on priorities to financially constrain the plan to fit within the projected historical revenues trend. Information received from public outreach (including legislative participation) made it clear that the public's priorities were to maintain and preserve our existing system and make it safe and efficient. Therefore, the commission made the following trade-off decisions regarding funding priority:

1. Maintenance, traffic operations, and preservation activities are top priorities. Total costs to fully fund these programs were included in the constrained plan.
2. Highway safety, environmental retrofit, economic initiatives, and a Puget Sound core system of HOV lanes were high priorities. Total costs to fully fund these programs were included within the constrained plan in most cases.
3. Revenues remaining after the above priorities were addressed would go to highway mobility improvements.

The trade-off decisions mean that a large majority of mobility needs would not be addressed in the next 20 years (Figure 1). Because of this disparity, the mobility needs were financially

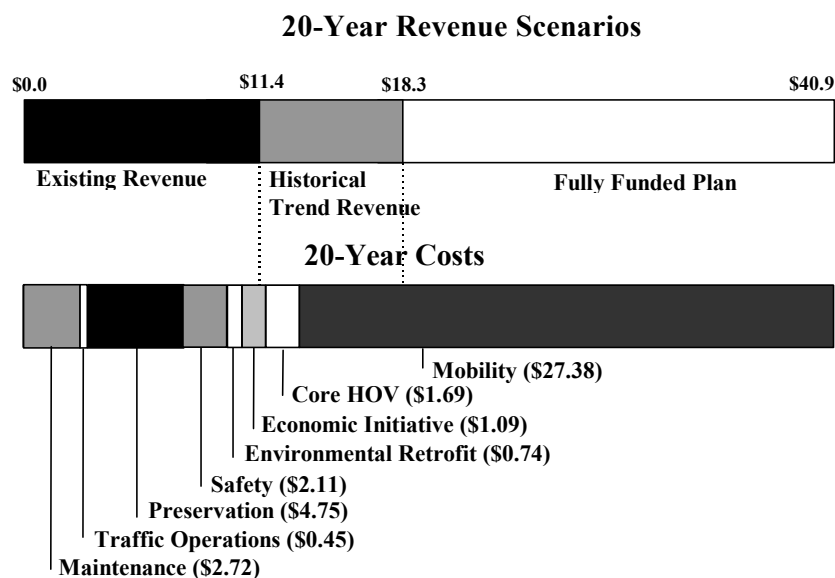


FIGURE 1 1998 Highway Needs versus Revenue ribbon chart (in 1997 \$ billions).

constrained. Determining which needs were included in the financially constrained plan was accomplished through a collaborative process between Washington State DOT Regions and regional transportation planning organizations (RTPOs). This collaborative process built consensus on proposed strategies and identified the most critical regional needs.

The planning process is ongoing, with continual review of service objectives and needs for each plan update. Mobility needs to address congestion were moved in or out of the financially constrained plan if regional priorities changed or as other needs were identified.

Figure 2 explains the type of constraining process that used to take place at Washington State DOT under the direction of the Transportation Commission. The outer ring reflects “All Needs.” Meeting All Needs was unrealistic; therefore service objectives were developed to define the most critical needs, portrayed by the second ring. Because future revenues were projected to fall short of funding all service objectives, the needs were prioritized and financially constrained, represented by the third ring. From this constrained list, a 6-year implementation plan was developed. Finally, projects were selected for programming in the 2-year budget from the 6-year implementation plan.

2001–Present The current 2003–2022 update of the HSP no longer constrains the list of needs. This provides flexibility in programming opportunities in relation to fluctuations in available revenue. By no longer constraining the needs list, it also avoids hard trade-off decisions, that may be irrelevant in future years due to continuously changing economic and environmental factors. The completed statewide plan is brought to the Transportation Commission for final approval. The current HSP details the amount of funding required to maintain, operate, preserve, and improve the state’s highway system for the next 20 years. The plan further details how current projected revenues will fall significantly short of funding all the needs identified in the plan.

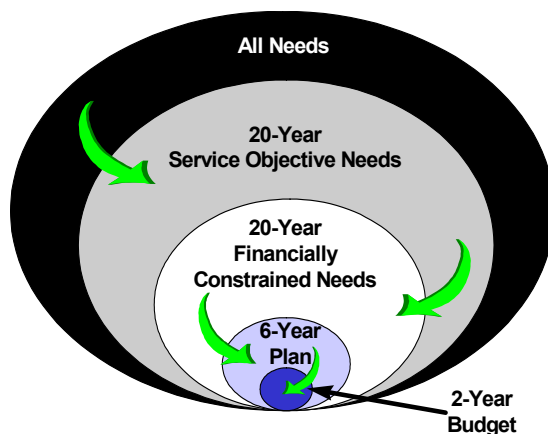


FIGURE 2 Constraining process employed at Washington State DOT under direction of the transportation commission.

The plan states “Since funding is not available to meet all the identified needs, priorities must be set. The plan is focused on taking care of the existing system *first by establishing targets to fully fund*” (*emphasis added*):

1. Maintenance,
2. Traffic operations, and
3. Preservation.

“Trade-off decisions must be made to distribute *any remaining funding* among (*the following*) capital improvement areas” (*emphasis added*):

1. Highway safety,
2. Mobility,
3. Economic initiatives, and
4. Environmental retrofit.

“These improvement areas are subject to the discretion of future programming decisions to balance long- and short-term strategies to meet 20-year HSP targets.”

The HSP also illustrates how Washington State DOT links solutions/strategies into efficient projects to maximize available resources and minimize impacts to traffic flow.

What Is the Relationship Between Capital and Operations Approaches to Congestion in Your Plan?

Policy/State Law Because of the disparity between transportation needs and revenues, the commission follows established trade-off decisions regarding highway and non-highway investments in developing the 20-year plan. The commission prioritizes investment choices as follows:

1. Maintenance, traffic operations, and preservation activities are top priorities and are the first call on available revenues.

2. Highway safety, environmental retrofit, economic initiatives, and a Puget Sound core system of HOV lanes are high priorities and are the second call on available revenues.

3. Revenues remaining after the above priorities are addressed go to highway mobility improvements.

Traffic operational solutions are considered as the first step in addressing a congestion deficiency identified in the plan; a capital improvement is the last strategy employed. The goal of operational strategies is to target the reduction of both people and freight delay on the state's system. Operation strategies include

- Increase the efficiency of operating the existing systems and facilities:
 1. Dispatch and traffic control,
 2. Low-cost enhancements,
 3. Low-cost traveler information,
 4. Traffic flow and safety investigations,
 5. Traffic flow control, and
 6. Traveler information systems. Examples of these operation strategies are: ramp metering in peak hours, service patrols and instituting incident response teams; signal timing and HOV lanes.
 - Reduce barriers that delay the effective and reliable movement of freight.
 1. Advanced technology for commercial vehicles. Expand and enhance advanced technology applications for commercial vehicle operations on the I-5 corridor by 2005, I-90 corridor by 2010, and statewide by 2015.
 2. Expand commercial vehicle information systems and networks (CVISN) statewide.
- (6) Expand and enhance CVISN into statewide application by covering Interstate highways by 2005 and highways statewide by 2010.

Where We've Been—Tools We've Used In the past operations and congestion relief were separate. Each had different objectives and strategies, different budgets, and different performance measures. Previously, in order to apply the operational strategies discussed above, we have relied on various tools for the measurement of congestion. Those tools include

- LOS—traditional measurement tool based on highway's traffic flow measured at various points in time.
- TTI Urban Mobility Report Data—Data supplied by TTI. TTI measures include Travel Rate Index and Daily Vehicle Hours of Delay per Mile.
- Travel Delay Methodology—Travel delay bases its computations on state highway segments identified by Highway Performance Monitoring System (HPMS) segments. For each HPMS segment, the program outputs a number of performance measuring parameters such as average speed, travel delay, travel delay costs, annual average daily traffic (AADT) over capacity ratio (ACR), travel rating index, and VMT to name a few.
- MPO and local jurisdiction's measuring—Because of limiting resources, these congestion forecast models are often contracted out or sometimes based on extrapolated trend analysis.

Most of the data leads to a measurement that can be considered a proxy analysis of actual operations. Either the data are based on some aggregate national average or do not offer real-time data. Often the measures did not take into account current congestion relief efforts such as ramp metering, incident response teams, or traffic control devices.

Where We're Going We are moving toward integrating our thinking on planning for operations and congestion relief; developing consistent performance measurement and using operations data for congestion relief planning. The Washington Transportation Commission in December adopted for Washington State DOT several important principles for new approaches to measuring the extent of congestion and the progress to be made toward finding solutions. The new principles include

- Use real-time measurements (rather than computer models) whenever possible.
- Measure congestion due to incidents as distinct from congestion due to inadequate capacity.
- Show the extent that reducing congestion caused by incidents will improve travel time reliability.
- Demonstrate both long-term trends and short-to-intermediate term results.
- Communicate about possible congestion fixes using an “apples-to-apples” comparison with the current situation (for example, if the trip takes 20 min today, how many minutes shorter will it be if Washington State DOT adds a freeway lane or improve the interchanges?).
- Use plain English to describe measurements.

Washington State DOT will concentrate particularly on reporting the effectiveness of the congestion relief programs in support of travel time reliability and system efficiency. Travel time reliability is of utmost importance to the public. This is verified through opinion surveys, which show predictability and reliability are of even greater concern to the public, than the travel time itself. (7)

In mid-May, Washington State DOT's website began to post real travel times updated every few minutes as compared to average expected travel times, for 11 prominent commutes on major urban freeways. Forthcoming measures will focus on the issues of reliability.

Washington State DOT distributes a quarterly performance measures report called the Gray Notebook (www.wsdot.wa.gov/accountability/default.htm). The most recent Gray Notebook, distributed March 31, 2002, contains discussions describing congestion and the development of new performance measures to analyze the effect of congestion relief related projects.

Washington State DOT is currently researching reliable, accurate measures of congestion. Some possibilities include

- Average vehicles per hour per lane (Figure 3).
- Measuring congestion on urban freeways.
- Perceptions of traffic congestion vary from place to place, and person to person. Given this varied perception of congestion, more than one measurement is required to adequately describe it. According to the U.S. Department of Transportation, the three key aspects of congestion are
 - Severity: How fast the traffic is moving;
 - Duration: How long or over what period of time traffic condition occurs; and
 - Extent: How much of the freeway system is congested.

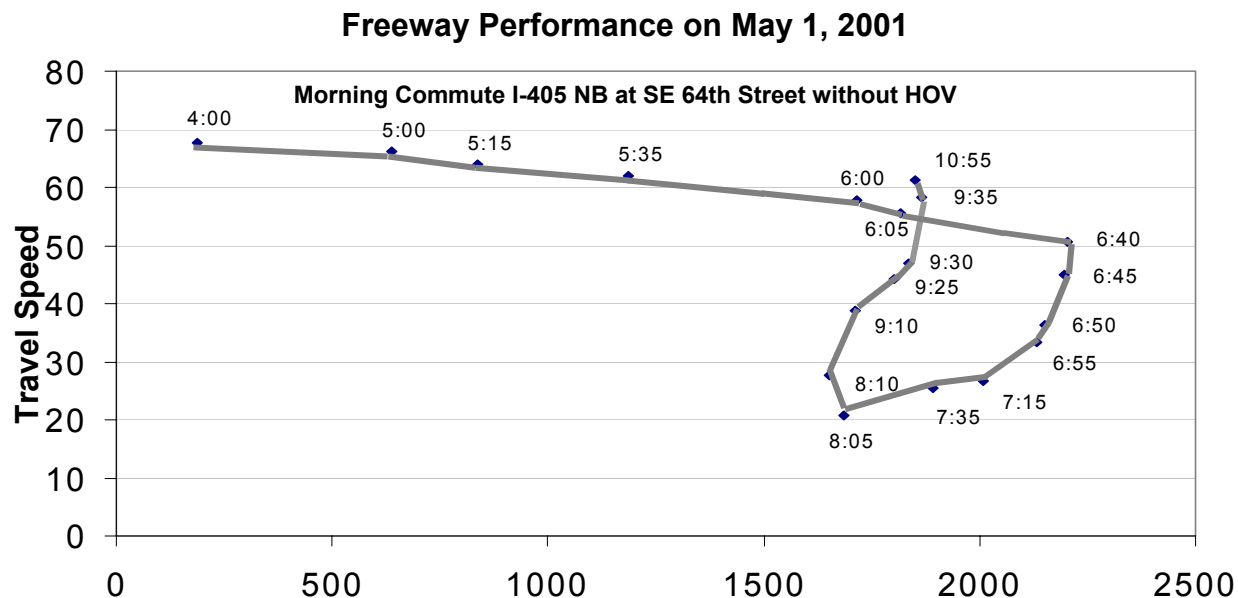


FIGURE 3 Average number of vehicles per hour per lane.

The severity of congestion refers to the intensity of the problem, as measured by the average overall travel speed, travel time, travel delay, or the length of back-ups behind obstructions such as incidents or over-burdened interchanges.

The duration of congestion is the length of time that the traffic flow is congested, often referred to as the length of the “peak period” of traffic flow. The duration of congestion can be assessed by measuring the length of the “peak period,” which can be determined by the amount of time the freeway performs below its maximum throughput efficiency (Figure 4).

The extent of congestion is the amount of the system or the geographic area that is congested as shown below on the Washington State DOT website flow map (Figure 5).

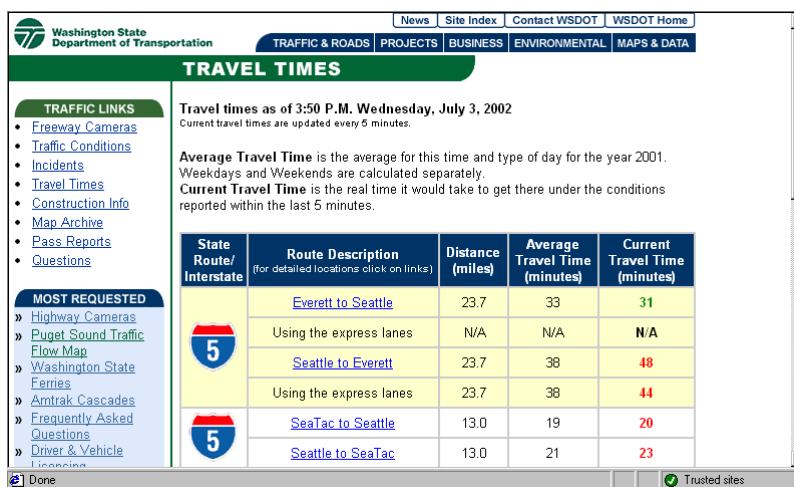


FIGURE 4 An example of real time travel on Washington State DOT website.

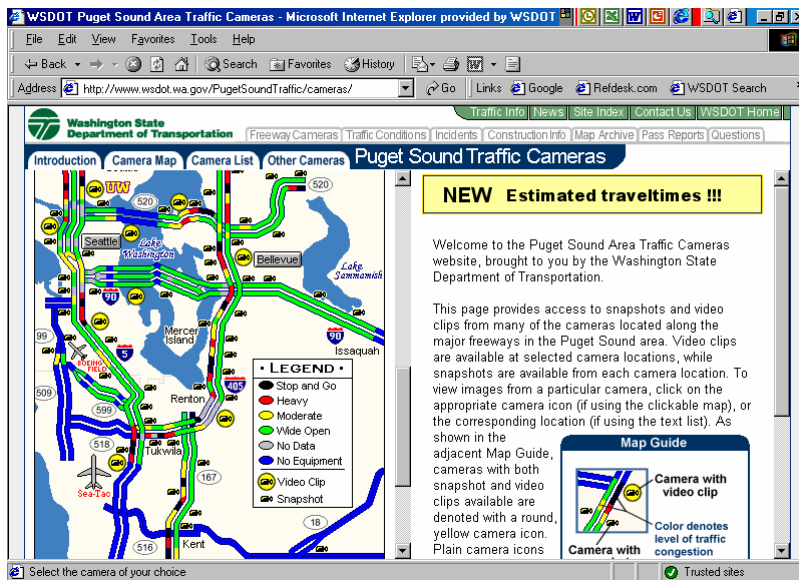


FIGURE 5 Washington State DOT website showing a flow map of the extent of congestion.

Variation or reliability is another important element of congestion that essentially describes the change in the three key aspects of congestion. Some highways tend to have higher occurrences of incidents (vehicle breakdown or accidents), which can result in highly unpredictable travel times. The differing travel times might be measured as a standard deviation from the average travel time.

When combined, these four elements—severity, duration, extent, and variation—can be used to provide the needed dimensions to describe congestion just as one would describe a box. As illustrated in Figure 6, the three dimensions are duration, extent, and severity. The variation in the size of the “box” provides the measure of reliability.

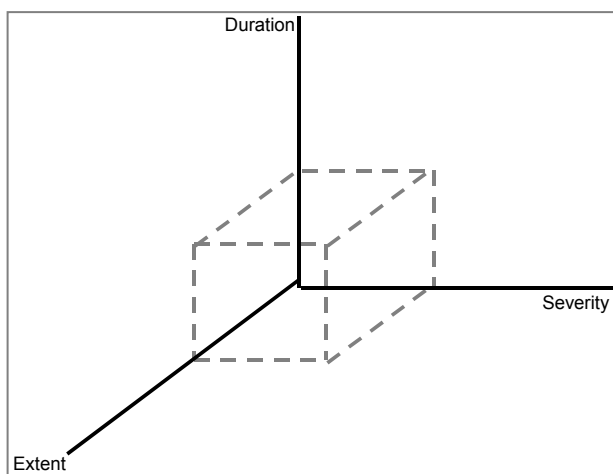


FIGURE 6 Dimensions used to describe congestion: duration, extent, and severity.

*What Intergovernmental Relations Issues Are You Facing Related to Congestion?
(City/Suburb, Urban/Rural, State/MPO, etc.)*

As stated above, Washington State DOT's long-standing policy of prioritizing programming is to focus on safety and preservation first, with any remaining funding applied to congestion issues. Because of diminishing revenue, there has been less and less funding available for congestion solutions. This policy and the current funding shortfalls essentially lead to a conflict between urban and rural constituents. Urban constituents feel they generate the bulk of the transportation taxes and thus their congestion concerns should be answered first. At the same time, rural voters do not experience the same intensity of congestion problems as urban voters. Rural constituents tend to focus on maintaining the current system, or seeking focused improvements that support economic development. This becomes a major sticking point when statewide transportation funding increases are presented to voters.

When funding is available for congestion management projects, there is often a disagreement between the citizens in major urban areas of the state and those citizens in adjacent suburbs. In this case, the conflict is not on the question of a need for congestion management; the conflict lies on the preferred solution to congestion problems. Urban voters tend to prefer further investment in their developed transit systems. At the same time, suburban voters tend to prefer more highway capacity improvements. Additionally, there can also be a difference of opinion on the definition of congestion. An increase in congestion in one jurisdiction may be extremely marginal compared to an increase in congestion in a larger, more urban area.

The capacity of many of Washington State's transportation facilities has failed to keep up with the state's growth, particularly in major urban regions. In an effort to resolve some of these funding development problems, the 2002 Washington State Legislature passed the Regional Transportation Investment District (RTID) Act (E2SSB 6140). RTID provides for implementing a RTIP (subject to a public vote) for construction and development of significant regional transportation projects. The RTID legislation also provided enhanced funding options at the county and regional levels and uses existing tax authority. If RTID goes forward, 90% of the funds are available for Highways of Statewide Significance (HSS) as defined in law, and 10% of the funds are for the non-HSS system. While this solves some of the issues mentioned above, others issues and complexities will still need to be resolved.

Intergovernmental relations are not confined to geographic jurisdictions. Limited funding for transportation facilities also drives conflict between different agencies forced to share the limited resource facilities. The regional transportation authority, Sound Transit, must resolve use conflicts issues with the various ROW owners. This puts them in negotiations with private freight rail companies and county and city councils. Each entity is entrusted to protect its own interests. At times these competing interests can be at odds.

What Land Use Issues Do You Face Related to Congestion Plans?

The GMA is the foundation for land use and transportation planning for most of Washington State. A requirement of the GMA is the development of and adoption of comprehensive plans. One component of the GMA is "concurrency" and adopting a LOS in which the transportation system is expected to perform. In order to meet concurrency, state law requires transportation improvements or strategies to be in place at the time of development, or that a financial commitment is in place to complete the improvements or strategies within 6 years. If

concurrency targets are not met and a financial commitment is not in place, the following may occur:

- A lower LOS can be adopted, or
- A moratorium on growth within the corridor is imposed.

The GMA also requires each jurisdiction to include additional detail in their comprehensive plan's transportation element. This additional detail includes

- A sub-element that includes estimates of traffic impacts to state-owned transportation facilities resulting from land use assumptions to assist the Washington State DOT in monitoring the performance of state facilities, planning for improvements, and assessing the impact of land-use decisions on state-owned transportation facilities.
 - State-owned transportation facilities to be included in the local plan's transportation inventory, including HSS. HSS are Interstate highways and other statewide principal arterials and ferry routes that are needed to connect major communities across the state and support the state's economy.
 - LOS for state-owned transportation facilities; and
 - Identified needs for state-owned facilities in local plans must be consistent with the state plan.

Washington State DOT also uses access management tools for both safety purposes and managing adjacent land uses. Washington State can employ a practice on nonlimited access highways, which requires businesses and residences to use adjacent local roads for access, rather

TABLE 1 Transportation Facilities, Concurrency, and LOS

Facility	LOS*	Concurrency
Local Transportation Systems	LOS identified and set by locals through the local GMA planning process.	Concurrency required under GMA for local transportation facilities.
Regional State Highways and Ferries	LOS set through a coordinated process with state, regional, and local input.	Concurrency requirement (as amended in 1998) does not address state-owned transportation facilities other than HSS.
State: HSS	LOS set by state in consultation with locals. (State has final authority to establish LOS on HSS.)	Concurrency requirements of GMA do not apply to transportation facilities and services of statewide significance. (Exception noted below.)
Exception: Island Counties	LOS established as identified above for local, regional, and HSS.	Concurrency required for HSS. State highways and ferry route capacity must be a factor in meeting the concurrency requirements in island counties.

* LOS or alternative transportation performance measures as identified in RCW 47.80.023.

than using state highways for access. The addition of lanes (HOV or general purpose) to existing corridors present several land use issues including; environmental (storm water, wetland mitigation, air quality, water quality, fish passage, etc.), access to highways to support economic vitality, and the high costs of ROWs in developed areas.

Wisconsin

How Does Your Statewide Plan Address Congestion?

Wisconsin's statewide planning process addresses congestion primarily through its State Highway Plan, as well as through the individual MPO plans. In the State Highway Plan we forecast total future usage (2020) on the State Trunk Highway system, as well as specific segments of those highways. Through a computerized model, the forecasts are then compared against the traffic-carrying capacity of those highway segments to identify congestion problems. The future highway travel reflects forecasts of any traffic that may switch to other modes if those modes are introduced or improved in a particular corridor. An example includes the addition of high-speed rail in certain corridors. The highway forecasts reflect the residual traffic left on that highway. In most situations, the traffic shifted to other modes is quite minimal.

The capacity analysis is based on the latest *Highway Capacity Manual* procedures. We have established performance measures and thresholds that we use to define deficiencies.

What Performance Measures Are Used to Describe the Congestion Problem and the Effect of Congestion-Related Projects?

In the State Highway Plan, Wisconsin uses LOS as our primary congestion performance measure. We have established acceptable/unacceptable levels of congestion. Generally, the determination of unacceptable congestion varies from LOS C/D to LOS E, depending on the highway system and whether it is urban or rural. LOS is augmented by hours of congestion as a performance measure for the southeastern Wisconsin freeway system.

How Does Your Plan Address Funding and Implementing Congestion-Related Projects?

The State Highway Plan is fiscally constrained to a level of funding deemed achievable (i.e., not necessarily constrained to existing funding levels). Most of our congestion-related highway projects are funded out of a special appropriation called Major Projects. This subset of all State Trunk Highway needs is specifically identified and compared to that funding source. As far as implementation of the congestion-related projects, Wisconsin has a specific process that must be followed for such large projects. Major Projects must go through an enumeration process that blesses the study of those majors (including the environmental analysis) and the actual funding for design and construction. The State Highway Plan serves as a guide as to which projects are recommended for study and funding.

What Is the Relationship Between Capital and Operations Approaches to Congestion in Your Plan?

For many of our most important freeways, we have analyzed operational improvements (such as ITS) to see if those types of actions could delay the need for capacity expansion. Generally, this is very minimal, however.

What Intergovernmental Relations Issues Are You Facing Related to Congestion? (City/Suburb, Urban/Rural, State/MPO, Etc.)

This is a frequent problem. For example, we are currently looking at the long-term congestion problems on our southeast freeway system. The main city (Milwaukee) is opposed to adding lanes to the freeways going through the city. However, even with aggressive transit improvements, this appears to be the only way to address the growth in congestion on routes not only important to the city, but also critical to intercity/Interstate travel in much of eastern Wisconsin.

In addition, we are faced with concerns about introducing other modes of travel (like light rail transit) between central cities and the suburbs.

What Land Use Issues Do You Face Related to Congestion Plans?

This is a prevalent concern. We have many folks opposed to improving congestion on the freeways because improved travel times and convenience will make living further away from the central cities more attractive, thus increasing commute lengths and VMT. We are trying to address these concerns by conducting detailed land use and transportation corridor plans to identify better the link between local development decisions and transportation problems. Through the conduct of such corridor plans we hope to get local buy-in to a coordinated approach to transportation and development.

TABLE 2 Summary of State Responses: Addressing Congestion in STPs

	Q1: How does your statewide plan address congestion?	Q2: What performance measures are used to describe the congestion problem and the effect of congestion-related projects?	Q3: How does your plan address funding and implementing congestion-related projects?	Q4: What is the relationship between capital and operations approaches to congestion in your plan?	Q5: What intergovernmental relations issues are you facing related to congestion? (city/suburb, urban/rural, state/MPO, etc.)	Q6: What land use issues do you face related to congestion plans?
AK	The System Management & Operation section of the STP discusses how transportation and land use planning can address congestion (e.g., the development and coordination of a congestion mitigation policy).	LOS and delay at intersections and arterials are used by Anchorage MPO to quantify congestion, prioritize projects and evaluate impact of completed projects.	STP recommends increasing the weight congestion reduction has in project evaluation.	Both are encouraged; there is not a defined relationship.	Primary relation is between Municipality of Anchorage and the state. The Anchorage MPO LRP is incorporated into the Municipality LRP. More emphasis is needed on gauging the impact of congestion relief projects (construction and operational).	Land use is under the jurisdiction of local government. The Anchorage LRP will continually be updated to include transportation and land use strategies to address congestion.
CA	STP explores many of the causes of congestion and offers policies/strategies to address congestion.	<ul style="list-style-type: none"> – Mobility (travel time delay); – Reliability (variability of travel time); and – Accessibility (travel time to desired destinations). 	STP advocates the flexibility of transportation revenue expenditures and serves as a guide for all long-range planning.	Capacity increase is necessary to meet growing demand but the STP also offers operational strategies.	Better coordination between decision makers is needed because cities and counties make land use decisions while state and regional agencies make transportation decisions. Needs/goals may not be consistent across the state or between agencies.	<ul style="list-style-type: none"> – Decisions are often revenue driven; – Local zoning ordinances promote single use; – Development patterns are auto dependent; and – Employment centers have moved out of central cities.

(continued)

TABLE 2 (continued) Summary of State Responses: Addressing Congestion in STPs

	Q1: How does your statewide plan address congestion?	Q2: What performance measures are used to describe the congestion problem and the effect of congestion-related projects?	Q3: How does your plan address funding and implementing congestion-related projects?	Q4: What is the relationship between capital and operations approaches to congestion in your plan?	Q5: What intergovernmental relations issues are you facing related to congestion? (city/suburb, urban/rural, state/MPO, etc.)	Q6: What land use issues do you face related to congestion plans?
FL	The 2002 short-range component of the STP sets mobility as Florida's most essential function and highlights the importance of maximizing system efficiency.	Mobility is broken into four dimensions each with a series of measures: quantity of travel, quality of travel, reliability, and utilization. The short-range component contains three short-range mobility objectives.	Setting priorities and distributing capacity programs are based on needs and formulas. For example a GIS tool is used to rank and prioritize highway segment needs.	2002 short-range component presents both operation and capital expansion as approaches to congestion relief.	Because the department sets LOS standards for the FIHS, they are faced with some local congestion problems and costs. The state has a concurrency management system, but there are several exceptions that can lead to conflict at a regional level.	Land use issues are typically accepted as given in congestion management plan, but newer regulation and tools (e.g., a new service handbook) integrate land use and transportation. It is not always clear who has responsibility for mitigating land use impacts on the transportation system. However, Florida has developed an access management program.
MD	See presentation section.	See presentation section.	See presentation section.	See presentation section.	See presentation section.	See presentation section.

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MI	<p>The STP discusses how Michigan DOT monitors capacity needs based on overall roadway operation and citizen input. Identified deficiencies are forwarded to the project development process. Congestion management focuses on significant corridors, freeway modernization, access management, interchange improvements, ITS and new technology, and truck-related strategies.</p>	<p>1. System condition (e.g., bridge ratings); 2. Accessibility, mobility, safety (e.g., crash rates and trends); and 3. Operational and service performance (e.g., LOS).</p>	<p>1. Michigan DOT’s large capital projects focus on corridors of highest significance; 2. Michigan DOT developed a “toolbox for funding large highway projects;” and 3. Michigan DOT employs a business model.</p>	<p>Lower capital operational improvements and preservation strategies employed before considering high capital intensive improvements.</p>	<p>With limited resources and competing interests, equity issues are paramount. Attempts to identify additional revenue sources also poses challenges. Debates exist over highway versus preservation needs and highway versus transit needs.</p>	<p>Multiple units of local government have legal authority to engage in land use planning and/or zoning. Limited coordination between agencies exists Michigan DOT uses access management to increase knowledge and cooperation between local governments.</p>

(continued)

TABLE 2 (continued) Summary of State Responses: Addressing Congestion in STPs

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MN	<p>The congestion policies listed in the current STP are</p> <ol style="list-style-type: none"> 1. Interregional linkage of RTCs, and 2. Enhanced RTCs mobility. <p>Effective management of the system is another policy with a link to congestion. Each policy contains outcomes, performance measures and targets to evaluate progress toward goals.</p>	<p>See Minnesota Performance Measure Matrix in Appendix B.</p>	<p>The STP sets the performance framework but is not fiscally constrained. Implementation and funding of congestion-related projects occurs in the district planning process.</p>	<p>An operations approach to congestion is utilized before capacity expansion or bottleneck removal.</p>	<p>A legislative struggle exists over transportation funding between Greater Minnesota and the Twin Cities metropolitan area. The Twin Cities experience daily congestion problems while rural Minnesota does not.</p>	<p>The STP encourages a balance between access and mobility. There remains a struggle between economic development and transportation (desired access and congestion). The Twin Cities expansion continues to strain the system.</p>
OH	<p>Congestion is incorporated as one of the performance measures and other factors used to prioritize among needs. Reducing congestion is included in the STP but is viewed as a location specific issue.</p>	<p>V/C, minutes of delay, and LOS are all used with different definitions for urban, rural, and suburban fringe areas.</p>	<p>As funding projections change, performance measure goals change proportionally.</p>	<p>A team is working on a congestion strategy for FY 2003 that identifies both operation and capital program strategies.</p>	<p>Recently (FY 2001), all state MPOs agreed on the LOS for major urban, medium urban, small urban, and rural areas. Ohio DOT continues to clarify city responsibility for managing congestion.</p>	<p>As a home rule state, Ohio DOT's role in land use is advisory. However, Ohio DOT provides access management training materials and programs.</p>

(continued)

TABLE 2 (continued) Summary of State Responses: Addressing Congestion in STPs

	Q1: How does your statewide plan address congestion?	Q2: What performance measures are used to describe the congestion problem and the effect of congestion-related projects?	Q3: How does your plan address funding and implementing congestion-related projects?	Q4: What is the relationship between capital and operations approaches to congestion in your plan?	Q5: What intergovernmental relations issues are you facing related to congestion? (city/suburb, urban/rural, state/MPO, etc.)	Q6: What land use issues do you face related to congestion plans?
TX	The STP discusses congestion but is not project or location specific. Other documents address congestion issues.	Performance measures are not currently used but under consideration.	Project specific issues are not managed through the STP but through the STIP and UTP.	The relationship is not examined in the STP.	The ongoing UTP revision process will identify corridor development needs and funding priorities through outreach programs and work groups. Work groups are comprised of elected officials, MPOs, RPOs, and Texas DOT staff.	All land issues are addressed at either the MPO, regional planning commissions, or at the local level.
WA	The Highway Systems Plan, included in the STP, addresses congestion through operation and capital enhancement strategies.	In 2001 new principals of congestion measurement were adopted. Washington State DOT will concentrate on programs that support travel time reliability and system efficiency. The recently distributed Gray Notebook discusses efforts to measure and address congestion.	The current STP is not fiscally constrained but does list the funding required to maintain, operate, preserve, and improve the system. The STP emphasizes taking care of the existing system first.	A mobility improvement is listed as the 3rd priority (after preservation and safety) in the STP. Congestion is first addressed through traffic operational solutions and capital improvement is the last strategy employed.	Due to policy priorities and diminishing revenues, there has been less funding available for congestion solutions, which has lead to a conflict between urban and rural constituents. Major urban areas and surrounding suburbs also disagree on congestion definitions and solutions. Conflicts also exist between agencies who must share limited resources. A RTID Act was passed to address some of these issues.	GMA, the foundation for land use and transportation planning in Washington, requires comprehensive plans, concurrency LOS standards, and detailed transportation elements. Washington State DOT also uses access management tools.

(continued)

TABLE 2 (continued) Summary of State Responses: Addressing Congestion in STPs

	Q1: How does your statewide plan address congestion?	Q2: What performance measures are used to describe the congestion problem and the effect of congestion-related projects?	Q3: How does your plan address funding and implementing congestion-related projects?	Q4: What is the relationship between capital and operations approaches to congestion in your plan?	Q5: What intergovernmental relations issues are you facing related to congestion? (city/suburb, urban/rural, state/MPO, etc.)	Q6: What land use issues do you face related to congestion plans?
WI	The SHP contains a capacity analysis on the State Truck Highway system and specific segments. Deficiencies are defined by performance measures and thresholds.	The SHP uses LOS as a primary congestion performance measure. Acceptable levels vary by highway system and urban/rural.	The constrained SHP serves as a guide as to which projects are recommended for study and funding. Most congestion related highway projects are funded out of a special appropriation called Major Projects.	Operational improvements are analyzed for the most important freeways to identify methods to delay the need for capacity expansion.	A frequent problem. For example, Milwaukee is opposed to a capacity expansion project that is essential to address growing congestion.	Developing detailed land use and transportation corridor plans to better identify the link between local development decisions and transportation problems. Through these corridor plans, a local buy-in to a coordinated approach will be sought.

NOTES: STP: Statewide Transportation Plan; STIP: Statewide Transportation Improvement Plan; TIP: Transportation Improvement Plan; LOS: Level of Service

PRESENTATIONS

To facilitate the discussion about how states are addressing congestion in their STPs, five state DOT officials made presentations. The following text summarizes the presentations. Each speaker may be contacted for additional information. See Appendix A for contact information.

How Congestion Is Addressed in Maryland's Statewide Transportation Planning Process

Neil Pederson, Maryland State DOT

Statewide Planning Process

The Maryland statewide transportation planning process has been a requirement in state law for over 20 years. It focuses on strategic policy priorities of the governor and secretary and is updated every 3 years. It is developed through a focus group approach and the latest effort concentrated on performance measures.

Policies Related to Congestion

We provide choices to travelers when practical with a goal of developing a seamless intermodal system. Smart Growth's supportive capacity, especially to support economic development and revitalization, is something else we provide. Other tools are used before added highway lanes, especially in urban areas. Unfortunately, we will live with congestion in some areas.

Modal Planning

A statewide transit plan has been developed with a goal of doubling ridership by 2020. SHA's Highway Needs Inventory has been modified to be consistent with Smart Growth. Virtually all highway capacity enhancements are on existing roads. Multimodal corridors have been identified without specific modal improvements being specified.

Relationship to Local Planning

Currently, there is a strong form of county government, with state requirements for strong local planning, which includes transportation. Maryland DOT works closely with counties and municipalities to have alignment in plans and land use and transportation balance each other. Adequate Public Facilities Ordinances help ensure land use/transportation capacity balance as well.

Relationship to MPO Planning

MPO plans tend to be derived from local plans, with fiscal constraint. MPO models are used by the state and local jurisdictions to identify needs, and we strive to have as much alignment as possible between local, MPO, and state plans.

Relationship to Land Use

Under Smart Growth, with few exceptions, highway capacity can only be provided within the boundaries of planned growth areas. Major emphasis will be placed on transit-oriented development, including highway access. Joint studies are done with local jurisdictions to determine the appropriate land use and transportation balance.

Multimodal Corridor Studies

The statewide and MPO plans currently identify several corridors with the need for major improvements, but do not specify modal improvements. There are several ongoing joint highway/transit studies for corridors from 20 to 50 mi in length. The outcome is usually some combination of highway, transit, transportation system management/transportation demand management and land use recommendations.

Transit Plan

The statewide transit plan calls for doubling ridership. It concludes that bus service will serve as the backbone of the statewide system. It includes major upgrades to the quality of bus services, including coverage, frequency, facilities, and marketing. It calls for six new fixed guideway lines and calls for tripling ridership in rural areas.

Major Metropolitan Highway Improvements in the Plan

No major highway capacity improvements will be done inside the Baltimore and Washington, D.C., beltways. Most improvements will be inside planned growth areas. Urban highway improvements are usually multimodal, including HOV lanes. Upgrades will be done of arterials to limit access or widening of existing freeways. New freeway interchanges will be built to support planned economic development.

Arterial Congestion

The largest payoff in terms of benefit–cost and congestion relief are often on arterials. Maryland also gets a high payoff from arterial signal system investments. Major emphasis is placed on intersection capacity improvements (turn lanes, bypass lanes). The most congested intersections are being replaced with grade-separated interchanges.

ITS/CHART

Sixty percent of congestion is estimated to be nonrecurring (accidents, disabled vehicles). A statewide strategic plan has been developed for ITS/CHART. Major emphasis areas are hardware for incident detection, reporting incidents to travelers, service patrols, and integration with other agencies and modes.

Rural Congestion

Most of the planned rural freeway network is built out. Smart Growth requirements will prevent most new rural highway capacity. Most rural congestion is during recreational peaks and rural interstates are becoming a problem. Major emphasis is being placed on access management.

Financing Issues

There is always a political priority tension between system preservation and capacity enhancement. Major investments are being made in transit with little congestion relief. There is little support for high payoff projects. Local jurisdictions are raising funds for congestion relief. Developers are financing local improvements.

Performance Measures

Traffic and congestion monitoring is being done using aerial surveillance techniques as well as attempting to use ITS/CHART data. Delay is more important than V/C ratio. Measures of reliability need to be developed. System measures do not appear to be as meaningful as more localized measures. There are currently challenges to TTI measure and ranking.

Issues

Congestion is growing much faster than population, households, vehicles, or travel and is becoming a political issue. Major investments in non-highway programs are not relieving congestion. How much congestion will be tolerated outside Smart Growth areas? Reliability is more important than travel time.

How Does Your Plan Address Funding and Implementing Congestion-Related Projects?

Kathleen Neill, Florida DOT

Summary Points

Florida's State Transportation System consists of

- Local roads;
- State Highway System that Florida DOT constructs/maintains (10% of roads, 66% of VMT)—includes arterials and the FIHS... FIHS includes only 3% of roads, but 32% of traffic;
- Florida DOT owns/operates one rail corridor; and
- Remaining facilities are owned/operated by local government/agencies or private entities.

FTP sets the policy framework to guide investment decisions.

- FTP includes statewide long-range goals that address mobility issues and linked to long range revenue forecast.

- The short-range component (covers 5 to 10 years) addresses how Florida DOT will implement the FTP and includes objectives that affect
 - Program funding and
 - Modal plans and project selection/priority setting geared at improving mobility.

Program Funding

- State law requires that the work program (our 5-year capital improvement plan) be balanced to expected revenues and achieve the objectives in the FTP.
- In all Florida DOT plans, preservation needs are met first before funding capacity projects.
 - 80% of all pavement on the FIHS must meet Florida DOT standards;
 - 90% of FIHS bridges must meet Florida DOT standards; and
 - 100% of FIHS roads must meet Florida DOT maintenance standards.
- The key to addressing congestion problems is through the FIHS.
- One FTP objective is to allocate at least 50% of all highway construction dollars to the FIHS. Funding in Florida DOT's 10-year plan (program and resource plan), as well as the work program is consistent with this objective.
 - Quality check: mobility measures included in SCR and other measures

Project Selection/Priority Setting—FIHS—is key for increased mobility/reducing congestion.

- FIHS includes Interstate, Turnpike, major arterials/expressways.
- SRC strategies—50% investment (highway construction) on FIHS; maintaining the rate of change of delay on the FIHS; increase transit ridership at twice the average rate of population growth.
 - FIHS cost feasible plans are developed for 5 years, 10 years, and through 2025.
 - Priority setting/project selection based on weighted statewide ranking that reflects.
 - Decision Support System (DSS) score—DSS is a GIS tool for prioritizing highway segments on FIHS—traffic driven (mobility) but does consider safety and is weak on measuring reliability.
 - Importance for improving trade/tourism/connectivity.
 - Interstate given higher weight than arterials.
 - District priority score—consider future development being planned.
 - Florida DOT executive management review.
 - The priority ranking is updated annually.
- Masterplans have been developed for each corridor on the Interstate and Turnpike ... closely following the MIS process.
- Action plans have been developed for improvements on the Interstate roads and arterial component.

Strategic Intermodal System

- FTP objective: create the Strategic Intermodal System (SIS) to provide for smooth and efficient transfers of passengers and freight between all modes.
- SIS steering team: modal partners; local, state, and FHWA officials; and other stakeholders (e.g., environmental groups).
- 2002—Designation of the SIS: development of criteria and recommendations to secretary on facilities to include on SIS; legislative action
- 2003—Develop a Strategic Plan that includes: map of SIS facilities; identification of needs; project prioritization methods; and funding options.

A Regional Freeway Reconstruction System Plan for Southeastern Wisconsin and Related Intergovernmental Issues

Ken Leonard, Wisconsin DOT

This study is a systemwide evaluation of the network of 270 mi of freeways in the seven-county Southeastern Wisconsin Region and will culminate in a plan providing recommendations for the reconstruction of the freeway system over the next three decades. The freeway system in Southeastern Wisconsin is an important element of the regional transportation system as the freeway system carries on an average weekday over one-third of all travel within Southeastern Wisconsin, and nearly all vehicle traffic traveling through Southeastern Wisconsin.

Much of the freeway system was built in the 1960s and early 1970s and is approaching the end of its 40- to 50-year design life, and will need to be reconstructed over the next 30 years. Consequently, decisions must be made at this time whether the freeway system should be rebuilt to modern design standards to address design and design-related safety problems, and also whether the freeway system should be rebuilt with additional lanes where traffic volumes warrant.

The study is being conducted by the MPO—the Southeastern Wisconsin Regional Planning Commission (SEWRPC) at the request of the Wisconsin DOT.

The study of the freeway system is being conducted within the context of the entire regional transportation system and existing and ongoing regional and statewide transportation system planning. Plans call for significant improvement and expansion of public transit and surface arterial street and highway improvement. Freeway reconstruction does not negate the need to significantly improve public transit or surface arterials and the study assumes such improvements will be implemented. However, improved public transit—even rail transit—will not significantly reduce freeway congestion or the need for freeway improvements.

The preliminary plan recommendation is to add 127 mi of additional lanes to address existing and forecast traffic congestion. Most of the proposed lane additions are six to eight lanes and four lanes to six lanes. The construction costs are \$3.37 billion for base reconstruction, \$2.15 billion for improvements to meet modern design and design-related standards, and another \$0.73 billion for additional lanes. The total construction costs over the next 30 years is \$6.25 billion or \$208 million annually.

The preliminary plan will avoid a doubling of traffic congestion and delay on the freeway system by the year 2020 (most of the system in the city of Milwaukee is already operating at a severe level of congestion). It will also increase freeway system travel time reliability. Safety

problems due to both design deficiencies and traffic congestion are significantly addressed in the plan and traffic volumes and neighborhood impacts on surface arterial streets are reduced.

Reconstruction of the 270-mi freeway system to modern design standards with design and design-related safety improvements would take 577 acres for ROW, 166 residences, 23 commercial buildings, and 2 governmental buildings. Adding freeway lanes would entail an additional increment of ROW: 81 acres, 50 residences, 8 commercial buildings, and 1 governmental building. Obviously, these are all preliminary impacts. Further study and preliminary engineering will determine if these potential impacts can be avoided or mitigated.

Two subalternatives are included in the plan: not widening 6 mi of an east-west section of IH-94 between Marquette and Zoo Interchanges in the center of the city of Milwaukee and not widening 13 mi of a north-south section of IH-43 between the Mitchell Interchange and Bender Road in the city of Milwaukee. The impacts of no widening these two sections are minor reduction in construction costs, reduced ROW acquisition, additional hours of severe congestion, doubling peak-hour travel delay and congestion, increased weekday traffic on surface arterial streets, and minimal traffic diversion and additional congestion on the remainder of the freeway system.

The various units of government and stakeholders have raised a number of issues. The state is concerned with the ability to move traffic through the region to serve Southern, Central, and Eastern Wisconsin as well as to provide access to tourism in Northern Wisconsin. This is the main economic route to Southeastern and Eastern Wisconsin and the main travel route for tourism from Chicago. Outlying counties have raised regional issues since their economies depend on travel to and through the city of Milwaukee. No additional lanes in the city of Milwaukee creates a bottleneck for regional travel. The city of Milwaukee is concerned about taking additional land, homes, and business and the potential loss to the city tax base. They have also raised concerns about potential impacts on air quality and urban sprawl. They have suggested that the entire system be reconstructed, interchanges improved and additional lanes be added to outlying freeways. Some neighborhood and stakeholder concerns have been raised about noise and visual impacts, environmental justice, loss of homes, and increased barrier effects.

The Regional Planning Commission has been conducting extensive public involvement in the region through public informational meetings, small neighborhood discussions, and one-on-one meetings. The Commission conducted an extensive environmental justice analysis on the entire regional plan but is also conducting additional environmental justice analyses and public involvement on this study to identify potential benefits and costs to all area citizens. After these additional analyses, the various units of government and stakeholders will be asked to reach a regional consensus. The Regional Planning Commission will facilitate additional discussions among the local units of government to help them reach an agreement. Ultimately, the seven counties will vote on adoption of a plan, modify their regional plan, and forward that recommendation to the state.

ADDITIONAL DISCUSSION: LAND USE AND TRANSPORTATION

Participants were asked to summarize the relationship between land use and state DOTs. The majority of this discussion was covered in the answers to question No. 6: What land use issues

do you face related to congestion plans? However, the following points reflect additional information.

- Florida is currently developing a statewide model that quantifies the impact of land use plans on highways and exploring methods of using the model in decision making.
- Several state DOTs raised the problem with assumptions included in comprehensive plans. Some plans assume that there will be improvements on state systems for which the state does not have funding.
- California has a new “livable communities” office, which will work with local officials on transportation decision making processes. Although the office does not have “teeth” its presence will elevate the topic of land use and transportation. The new MPO in San Diego is another exciting development because it may become the first transportation agency with land use control. However, the jurisdiction of the new MPO is still being decided.
- Several state DOTs described the conflict between local government desire to increase their tax base through development (e.g., shopping malls) and the need for adequate transportation access. A possible solution is impact fees but many states do not use them. Concurrency plans and access management are other strategies to address land use issues.
- Highway/transit polarization. What is transit’s role in congestion relief? The discussion of the benefits–costs of capacity versus transit strategies needs to be more rational. A recent MPO study concluded that highway investment was the only approach that impacted congestion even under heavy transit plans. Transit will lose support if projects are touted as the solution to congestion and then fail to improve conditions. Perhaps the benefit of transit should focus on its ability to increase the throughput in/out of city centers.
- A systems approach to prioritizing projects is appealing in theory but difficult to implement. What criteria should be used to label a road “important” to the system? The selection of roads is typically not an issue until funding is connected to the prioritization. Bringing all stakeholders together to discuss prioritization criteria and conducting workshop around the state will improve the process but the execution of a systems approach remains uncertain.
- A key to linking transportation and land use is the establishment of a solid relationship between state DOTs and local governments. State DOTs should get involved in the planning process early, offer advice and positive comments, and, if possible, funding assistance. However, the local areas must be interested in this assistance and state DOTs must always remember they are the “guests at the table.” Maryland described several successes such as how they are assisting local areas in use of transit as a marketing tool when designing transit-oriented developments.
- Corridor development plans represent unique opportunities to address and improve interjurisdictional issues.
- The use of ITS technology to address congestion was briefly discussed. Overall states considered ramp metering as a beneficial tool for congestion relief. However, one state emphasized the use of ITS for nonrecurring congestion detection and clearing versus recurring congestion.
- The FHWA Administrator has listed congestion as one of the top three priorities of the agency. The FHWA approach to congestion issues is still being decided but capacity building will play a role.

SUMMARY AND RESEARCH

The following is a summary of key points made, taking into consideration the state-submitted answers, the five presentations, and various discussions.

1. Congestion is a significant issue in all states participating in the peer exchange, and is addressed in most STPs.
2. There is a movement towards delay/speed/travel-time/reliability performance measures and away from peak-hour LOS. Data availability and ability to forecast these measures is an issue.
3. Use of traffic management center generated data is growing for performance measures and planning. States are collecting and monitoring congestion data as part of their planning/operations program, but not many call it a formal congestion management system.
4. States seem to be increasingly using multimodal corridor planning—how to do this is an issue. How to get partners to the table and to establish consistent priorities with partners are formidable challenges.
5. There is more integration of systems operations and planning, but this is still an evolving practice. Improved ability to define benefits from operational improvements is needed.
6. Many states are struggling with trying to separate recurrent and non-recurrent congestion for measurement and planning purposes. Issues with bottleneck identification (aerial surveillance techniques could be an effective way of identifying bottlenecks).
7. Arterial congestion is also an issue, not just freeway congestion. Some of the biggest returns on investment can be achieved through improving arterial geometrics or operations (more manageable from a cost perspective).
8. States take land use conditions and plans into consideration in transportation planning—through access management, adequate public facility (concurrency) programs, or state growth management/smart growth programs. Local land use decisions and their impacts on state and regional transportation facilities are still an issue.
9. Many states have large transit ridership increases as a goal in their statewide multimodal plan. There is a concern that large transit investments may not have the desired impact on improving congestion. Throughput is a potential measure for transit investment.

The participants also identified the following research items to advance the state DOTs' ability to address congestion issues:

1. How to measure or define transit's contribution to congestion relief (synthesis) effectively.
2. How to develop measures of delay and reliability that are cost effective to collect.
3. Improve our ability to forecast measures of reliability and delay
4. How effective are congestion management systems: what have we learned?
5. How much congestion is not recurrent? What methods exist to identify locations of recurrent and nonrecurrent congestion?
6. Document the effects of arterial improvements on congestion relief.

NOTES

1. *1999 Status of the Nation's Surface Transportation System: Conditions and Performance Report to Congress*. U.S. Department of Transportation, 2000.
2. *Urban Mobility Study*. Texas Transportation Institute, College Station, 1998.
3. *Urban Mobility Study*. Texas Transportation Institute, College Station, 2002.
4. Orski, C. K. *Relieving Highway Congestion through Capacity Enhancements and Increased Efficiency*. Statement before the Hearing of the Subcommittee on Highways and Transit of the House Committee on Transportation and Infrastructure, May 21, 2002, www.house.gov/transportation/05-21-02/orski.html. Accessed June 27, 2002.
5. Increase in Hours of Delay per Person and Increase in Annual Per Person Average Cost of Delay.
6. The CVISN program uses ITS technology to promote the safe and legal movement of commercial vehicle traffic within the state and across the nation. The CVISN program refers to the collection of information and communication systems owned and operated by the FHWA, states, motor carriers, and other stakeholders.
7. Orski, C. K. *Relieving Highway Congestion through Capacity Enhancements and Increased Efficiency*. Statement before the Hearing of the Subcommittee on Highways and Transit of the House Committee on Transportation and Infrastructure, May 21, 2002. www.house.gov/transportation/05-21-02/orski.html. Accessed June 27, 2002.

APPENDIX A

Participants List

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APPENDIX B

Minnesota Performance Measure Matrix

Policy	Performance Measure Category	Highway/Bridges
1. Preserve essential elements of existing transportation systems.	1.1 Customer Ride Quality	1.1H Percent of miles that meet good and poor ride quality targets.
	1.2 Physical Condition of the Infrastructure	1.2H1 Remaining service life of pavement.
		1.2H2 Percent of bridges that meet good and poor structural condition targets.
2. Support land use decisions that preserve mobility and enhance the safety of transportation systems.	2.1 Conformance of Local Plans and Ordinances with Access Management Guidelines	2.1H Percent of townships, counties, and municipalities along IRCs whose adopted local plans and ordinances are in conformance with IRC Management Plans and Partnership studies.
	2.2 Space or ROW that Protection to Meet Future Demand	2.2H Percent of IRC and bottleneck removal projects identified in the 10-Year Program for which ROW needs have been protected.
3. Effectively manage the operation of existing transportation systems to provide maximum service to customers.	3.1 Travel Time Reliability	3.1H1 Clearance time for incidents, accidents or hazardous materials (metro).
		3.1H2 Snow and ice removal clearance time.
	3.2 Travel and Flow Management	3.2H Percent of miles of corridors that are managed.
4. Provide transportation options for people and freight.	4.1 Amount of Facilities/Services Provided	
	4.2 Market Share of Travel Options	
	4.3 Access between Ports/Terminals/Major Generators and Transportation Corridors	See Freight Measure—4.3F and 4.3 Aeronautics
5. Enhance mobility in interregional transportation corridors linking regional trade centers (RTCs).	5.1 Travel Speed	5.1H Percent of IRC miles meeting speed targets.
	5.2 Travel Time Reliability	5.2H Peak period travel time reliability.
	5.3 Service Between RTCs	
6. Enhance mobility within major RTCs.	6.1 Travel Time	6.1H Ratio of peak to off-peak travel time (Travel Rate Index).
	6.2 Travel Time Reliability	6.2H Peak period travel time reliability.
	6.3 Duration and Extent of Congestion	6.3H Hours and miles of peak period congestion per day.

(continued)

Minnesota Performance Measure Matrix (continued)

Policy	Performance Measure Category	Highway/Bridges
7. Increase the safety and security of transportation systems and their users.	7.1 Crash Rate or Crashes	7.1 Total crash rate
	7.2 Total Fatalities	7.2 Fatalities per year (3-year average).
	7.3 Security Measures	(To be completed once US DOT provides direction)
Policy	Performance Measure Category	Passenger Service/Bicycle-Pedestrian
1. Preserve essential elements of existing transportation systems.	1.1 Customer Ride Quality	Transit: See Highway Measure 1.1H
	1.2 Physical Condition of the Infrastructure	1.2T Percent of transit fleet whose remaining life is within the minimum normal service life.
2. Support land use decisions that preserve mobility and enhance the safety of transportation systems.	2.1 Conformance of Local Plans and Ordinances with Access Management Guidelines	Transit: See Highway Measure 2.1H
	2.2 Space or ROW that Protection to Meet Future Demand	2.2T Percent of Advantages for Transit projects identified in the 10-year <i>Moving Minnesota</i> Initiative for which ROW has been protected.
3. Effectively manage the operation of existing transportation systems to provide maximum service to customers.	3.1 Travel Time Reliability	Transit: See Highway Measures 3.1H and 6.2H
	3.2 Travel and Flow Management	Transit: See Highway Measure 3.2H
4. Provide transportation options for people and freight.	4.1 Amount of Facilities/Services Provided	4.1T Bus service hours.
		4.1PR Miles and hours of local rail passenger service.
		4.1 Percent of IRC crossings in RTCs with bike/ped-ways.
	4.2 Market Share of Travel Options	4.2T1 Percent of peak period non-auto trips in RTCs.
		4.2T Peak Period auto occupancy.
4.3 Access between Ports/Terminals/Major Generators and Transportation Corridors		
5. Enhance mobility in interregional transportation corridors linking RTCs.	5.1 Travel Speed	Transit: See Highway Measure 5.1H
	5.2 Travel Time Reliability	Transit: See Highway Measure 5.2H
	5.3 Service Between RTCs	5.3T Percent of RTCs with scheduled interregional passenger service.

(continued)

Minnesota Performance Measure Matrix *(continued)*

Policy	Performance Measure Category	Passenger Service/Bicycle-Pedestrian	
6. Enhance mobility within major RTCs.	6.1 Travel Time		
	6.2 Travel Time Reliability	Transit: See Highway Measure 6.2H	
	6.3 Duration and Extent of Congestion	Transit: See Highway Measure 6.3H	
7. Increase the safety and security of transportation systems and their users.	7.1 Crash Rate or Crashes	See Highway Measure 7.1	
	7.2 Total Fatalities	See Highway Measure 7.2	
	7.3 Security Measures	See Highway Measure 7.3	
Policy	Performance Measure Category	Freight (Motor Carrier, Railroad, Waterways)	Aeronautics
1. Preserve essential elements of existing transportation systems.	1.1 Customer Ride Quality	Motor Carrier: See Highway Measure 1.1H	
	1.2 Physical Condition of the Infrastructure	Motor Carrier: See Highway Measures 1.2H	1.2A Percent of airport runways that meet good and poor pavement condition targets.
2. Support land use decisions that preserve mobility and enhance the safety of transportation systems.	2.1 Conformance of Local Plans and Ordinances with Access Management Guidelines	Motor Carrier: See Highway Measure 2.1H	
	2.2 Space or ROW that Protection to Meet Future Demand	Motor Carrier: See Highway Measure 2.2H	2.2A Percent of airports for which land or space has been protected to meet requirements of master plans or airport layout plans.
3. Effectively manage the operation of existing transportation systems to provide maximum service to customers.	3.1 Travel Time Reliability	Motor Carrier: See Highway Measures 3.1H and 6.2H	
	3.2 Travel and Flow Management	Motor Carrier: See Highway Measure 3.2H	
4. Provide transportation options for people and freight.	4.1 Amount of Facilities/Services Provided		4.1A Population within 1 h of scheduled air service.
	4.2 Market Share of Travel Options		
	4.3 Access between Ports/ Terminals/ Major Generators and Transportation Corridors	4.3F Percent of major generators (ports/ terminals/other major generators) with appropriate access to IRCs or water and/or rail corridors.	4.3A Percent of airports with appropriate access to IRCs.

(continued)

Minnesota Performance Measure Matrix *(continued)*

Policy	Performance Measure Category	Freight (Motor Carrier, Railroad, Waterways)	Aeronautics
5. Enhance mobility in interregional transportation corridors linking RTCs.	5.1 Travel Speed	Motor Carrier: See Highway Measure 5.1H	
	5.2 Travel Time Reliability	Motor Carrier: See Highway Measure 5.2H	
	5.3 Service Between RTCs		
6. Enhance mobility within major RTCs.	6.1 Travel Time	Motor Carrier: See Highway Measure 6.1H	
	6.2 Travel Time Reliability	Motor Carrier: See Highway Measure 6.2H	
	6.3 Duration and Extent of Congestion	Motor Carrier: See Highway Measure 6.3H	
7. Increase the safety and security of transportation systems and their users.	7.1 Crash Rate or Crashes	Motor Carrier: See Highway Measure 7.1	7.1A Total general aviation crashes. (3-year average)
		7.1F Total crashes at at-grade railroad crossings (3-year average)	
	7.2 Total Fatalities	See Highway Measure 7.2	7.2A Total general aviation fatalities (3-year average)
	7.3 Security Measures	See Highway Measure 7.3	See Highway Measure 7.3

Source: Robinson, F. O., and A. McKenzie. Guiding Future Investments in Minnesota's Transportation Systems and Services: Performance-Based Approach to Long-Range Planning. Presented at 82nd Annual Meeting of the Transportation Research Board, Washington, D.C., 2003.

APPENDIX C

Michigan Fiscal Constraint Documentation

The following tables provide a sample of the various documents Michigan is required to submit to demonstrate fiscal constraint. The samples were selected to illustrate that breadth and depth of the federal requirements.

TABLE 1 Demonstration of Financial Constraint for Southeast Michigan Council of Governments (SEMCOG). Summary table for the SEMCOG. The table combines financial data from Ann Arbor, Port Huron, and all other parts of SEMCOG.

TABLE 2 Demonstration of Financial Constraint for Genesee County Metropolitan Planning Commission. Flint is a transportation management area (TMA) (>200,000). The table is from the SEMCOG TIP. Lansing and Grand Rapids are two additional TMAs whose financial constraint is documented in separate tables. SEMCOG and Ann Arbor are also TMAs (information listed in Table 1).

TABLE 3 Demonstration of Financial Constraint for Macatawa Area Coordinating Council (MACC). Holland/Zeeland is a small MPO (non-TMA). Seven additional small MPO exist in Michigan each with a separate fiscal constraint table. These tables are contained in the individual TIPs.

TABLE 4 Demonstration of Financial Constraint for Non-Metropolitan Areas of the State. The table summarizes all non-MPO programs both Michigan DOT and local and is part of the STIP report.

TABLE 5 Demonstration of Financial Constraint for Statewide Programs. The table summarizes all statewide grant programs that are constrained at the statewide level even though some of the projects may be listed in the MPO tables. The table is part of the STIP report.

TABLE 6 Demonstration of Financial Constraint by Michigan Federally Assisted Programs. The table verifies overall financial constraint for the state (Michigan DOT and local programs). It is a summary of the first four categories from the MPO/rural tables plus the programs from the statewide table and trunkline totals from all of the tables.

**TABLE 1 Demonstration of Financial Constraint—SEMCOG:
FY 2002–2004 Base Revenue Estimates (March 2001)**

	Program	FY 2002		FY 2003		FY 2004	
		New Resources	New Commitments	New Resources	New Commitments	New Resources	New Commitments
(1)	TMA (AA, Det, Tol)	\$71,239,304	\$69,701,000	\$64,700,255	\$60,905,000	\$67,130,903	\$65,348,000
(1)	Small MPO (Port Huron)	\$1,707,000	\$1,793,000	\$1,871,000	\$1,944,000	\$1,908,000	\$1,840,000
(2)	TEDF-C (Mac, Oak, Wayne)	\$30,640,000	\$30,640,000	\$25,503,000	\$23,107,000	\$25,503,000	\$28,366,000
(3)	STP Rural/TEDF-D (all 7 counties)	\$9,858,364	\$9,224,000	\$7,598,842	\$6,832,000	\$7,025,629	\$6,631,000
	Small Urban	\$3,465,000	\$3,465,000	\$1,122,000	\$1,122,000	\$600,000	\$600,000
	Local Enhancements	\$8,532,000	\$8,532,000	\$210,000	\$210,000	\$0	\$0
	Local CMAQ	\$19,316,000	\$19,316,000	\$838,000	\$838,000	\$913,000	\$913,000
	Local Highway Safety	\$250,000	\$250,000	\$0	\$0	\$0	\$0
	Local Rail/Highway Crossings	\$0	\$0	\$0	\$0	\$0	\$0
	Critical Bridge	\$25,160,000	\$25,160,000	\$500,000	\$500,000	\$0	\$0
	State Park Access	\$0	\$0	\$0	\$0	\$0	\$0
	Local High-Priority Projects	\$3,163,000	\$3,163,000	\$13,606,000	\$13,606,000	\$0	\$0
	Trunkline	\$532,552,000	\$532,552,000	\$312,028,000	\$312,028,000	\$220,433,000	\$220,433,000
	FTA Transit Programs	\$62,136,000	\$62,136,000	\$58,233,000	\$58,233,000	\$58,406,000	\$58,406,000
	Nonfederal Programs	\$105,001,000	\$105,001,000	\$89,625,000	\$89,625,000	\$76,045,000	\$76,045,000
	TOTAL	\$873,019,668	\$870,933,000	\$575,835,097	\$568,950,000	\$457,964,532	\$458,582,000

- (1) No RABA. Increases at the rate of change of national authorizations.
(2) No change (consistent with past few years).
(3) STP Rural—No RABA. Increases at the rate of change of national authorizations.
TEDF—No change (consistent with past few years).

Statewide programs:

- If projects are already selected, the sum of the cost of projects should be entered for both New Resources and New Commitments.
- If projects are unselected during STIP development, an estimate (e.g., based on historical success) should be entered for New Resources and New Commitments. (Applied for projects may be listed in an illustrative list).

New Resources:

- The total reflects the larger of either (1) federal funds, plus a 20% nonfederal match, or (2) federal funds, plus dedicated state funds.

**TABLE 2 Demonstration of Financial Constraint—Genesee County Metropolitan Planning Commission:
FY 2002–2004 Base Revenue Estimates (March 2001)**

	Program	FY 2002		FY 2003		FY 2004	
		New Resources	New Commitments	New Resources	New Commitments	New Resources	New Commitments
(1)	TMA (Flint)	\$5,242,000	\$5,870,627	\$5,347,000	\$6,130,831	\$5,454,000	\$5,274,249
	Small MPO	\$0	\$0	\$0		\$0	
(2)	TEDF-C (Genesee)	\$3,874,000	\$5,728,220	\$3,874,000	\$4,322,941	\$3,874,000	\$3,408,941
(3)	STP Rural (Genesee)	\$531,000	\$533,000	\$542,000	\$267,000	\$553,000	\$573,600
	Small Urban	\$0	\$0	\$0	\$0	\$0	\$0
	Local Enhancements	\$416,500	\$416,500	\$0	\$0	\$0	\$0
	Local CMAQ	\$0	\$0	\$0	\$0	\$0	\$0
	Local Highway Safety	\$0	\$0	\$0	\$0	\$0	\$0
	Local Rail/Highway Crossings	\$111,111	\$111,111	\$111,111	\$111,111	\$111,111	\$111,111
	Critical Bridge	\$1,201,750	\$1,201,750	\$418,000	\$418,000	\$0	\$0
	State Park Access	\$0	\$0	\$0	\$0	\$0	\$0
	Local High-Priority Projects	\$735,000	\$735,000	\$0	\$0	\$0	\$0
	Trunkline	\$51,306,483	\$51,306,483	\$7,546,333	\$7,546,333	\$56,827,279	\$56,827,279
	TOTAL	\$63,417,844	\$65,902,691	\$17,838,444	\$18,796,216	\$66,819,390	\$66,195,180

- (1) No RABA. Increases at the rate of change of national authorizations.
(2) No change (consistent with past few years).
(3) No RABA. Increases at the rate of change of national authorizations.

Statewide Programs:

- If projects are already selected, the sum of the cost of projects should be entered for both New Resources and New Commitments.
- If projects are unselected during S/TIP development, an estimate (e.g., based on historical success) should be entered for New Resources and New Commitments. (Applied for projects may be listed in an illustrative list.)

New Resources:

- The total reflects the larger of either (1) federal funds, plus a 20% nonfederal match, or (2) federal funds, plus dedicated state funds.
- Total TEDF-C reflects state and federal funds, plus a 20% nonfederal match.

**TABLE 3 Demonstration of Financial Constraint—MACC:
FY 2002–2004 Base Revenue Estimates (March 2001)**

	Program	FY 2002		FY2003		FY2004	
		New Resources	New Commitments	New Resources	New Commitments	New Resources	New Commitments
(1)	TMA	\$0	\$0	\$0	\$0	\$0	\$0
	Small MPO (Holland/Zeeland)	\$2,000,000	\$2,000,000	\$1,701,000	\$1,701,000	\$18,50,000	\$8,500,000
	TEDF-C	\$0	\$0	\$0	\$0	\$0	\$0
	STP Rural/TEDF-D	\$0	\$0	\$0	\$0	\$0	\$0
(2)	Small Urban	\$0	\$0	\$0	\$0	\$0	\$0
	Local Enhancements	\$0	\$0	\$0	\$0	\$0	\$0
(3)	Local CMAQ	\$978,750	\$978,750	\$576,250	\$576,250	\$1,018,750	\$1,018,759
	Local Highway Safety	\$0	\$0	\$0	\$0	\$0	\$0
	Local Rail/Highway Crossings	\$222,222	\$222,222	\$222,222	\$222,222	\$222,222	\$222,222
	Critical Bridge	\$223,390	\$223,390	\$223,390	\$223,390	\$223,390	\$223,390
	State Park Access	\$0	\$0	\$0	\$0	\$0	\$0
	Local High-Priority Projects	\$0	\$0	\$0	\$0	\$0	\$0
	Trunkline	\$2,324,190	\$2,324,190	\$2,440,000	\$2,440,000	\$2,900,000	\$2,900,000
	TOTAL	\$5,748,552	\$5,748,552	\$5,162,862	\$5,162,862	\$12,864,362	\$12,864,362

(1) No RABA. Increases at the rate of change of national authorizations. Includes local funds in excess of match; FY 2002=\$332,000, FY 2004=\$6,765,000.

(2) Carry over project of \$1,200,000 not shown.

(3) Carryover project of \$200,000 not shown.

Statewide programs:

- If projects are already selected, the sum of the cost of projects should be entered for both New Resources and New Commitments.
 - If projects are unselected during S/TIP development, an estimate (e.g., based on historical success) should be entered for New Resources and New Commitments.
- (Applied for projects may be listed in an illustrative list.)

New Resources:

- The total reflects the larger of either (1) federal funds, plus a 20% nonfederal match, or (2) federal funds, plus dedicated state funds.

**TABLE 4 Demonstration of Financial Constraint—Nonmetropolitan Areas of the State:
FY 2002–2004 Base Revenue Estimates (March 2001)**

	Program	FY 2002		FY 2003		FY 2004	
		New Resources	New Commitments	New Resources	New Commitments	New Resources	New Commitments
(1)	TMA	N/A	N/A	N/A	N/A	N/A	N/A
	Small MPO	N/A	N/A	N/A	N/A	N/A	N/A
	TEDF-C	N/A	N/A	N/A	N/A	N/A	N/A
	STP Rural/TEDF-D	\$44,811,000	\$41,401,115	\$45,233,000	\$40,635,631	\$45,663,000	\$28,057,496
	Small Urban	\$13,246,999	\$13,246,999	\$8,995,507	\$8,995,507	\$0	\$0
	Local Enhancements	\$9,197,838	\$9,197,838	\$0	\$0	\$0	\$0
	Local CMAQ	\$9,000	\$9,000	\$17,000	\$17,000	\$817,000	\$817,000
	Local Highway Safety	\$0	\$0	\$0	\$0	\$0	\$0
	Local Rail/Highway Crossings	\$2,444,444	\$2,444,444	\$2,444,444	\$2,444,444	\$2,444,444	\$2,444,444
	Critical Bridge	\$11,238,194	\$11,238,194	\$11,238,194	\$11,238,194	\$11,238,194	\$11,238,194
	State Park Access	\$562,000	\$562,000	\$362,500	\$362,500	\$750,000	\$750,000
	Local High-Priority Projects	\$0	\$0	\$0	\$0	\$0	\$0
	Trunkline	\$329,232,182	\$329,232,182	\$296,084,451	\$296,084,451	\$233,760,215	\$233,760,215
	TOTAL	\$410,741,657	\$407,331,772	\$364,375,096	\$359,777,727	\$294,672,853	\$277,067,349

(1) Enough local funds to match half the federal aid (i.e., federal TEDF D and STP rural) are assumed. The other half of the nonfederal share is assumed to come from state TEDFD funds. STP rural—No RABA. Increases at the rate of change of national authorizations. TEDF—No change (consistent with past few years).

Statewide programs:

- If projects are already selected, the sum of the cost of projects should be entered for both New Resources and New Commitments.
- If projects are unselected during STIP development, an estimate (e.g., based on historical success) should be entered for New Resources and New Commitments. (Applied for projects may be listed in an illustrative list.)

New Resources:

- The total reflects the larger of either (1) federal funds, plus a 20% nonfederal match, or (2) federal funds, plus dedicated state funds.

**TABLE 5 Demonstration of Financial Constraint—Statewide Programs:
FY 2002–2004 Base Revenue Estimates (March 2001)**

	Program	FY 2002		FY 2003		FY 2004	
		New Resources	New Commitments	New Resources	New Commitments	New Resources	New Commitments
(1)	Small Urban	\$11,030,000	\$19,516,152	\$11,251,000	\$11,522,200	\$11,476,000	\$0
(1)	Local Enhancements	\$15,434,175	\$15,434,175	\$15,743,000	\$0	\$16,058,000	\$0
(1)	Local CMAQ	\$25,154,000	\$25,154,000	\$25,657,000	\$4,900,250	\$26,170,000	\$4,176,250
(1)	Local Highway Safety	\$6,744,000	\$0	\$6,879,000	\$0	\$7,017,000	\$0
(1)	Local Rail/Highway Crossings	\$6,743,000	\$5,555,557	\$6,878,000	\$5,555,557	\$7,016,000	\$5,555,557
(1)	Critical Bridge (local)	\$25,030,526	\$25,030,526	\$25,030,526	\$25,030,526	\$25,030,526	\$25,030,526
(2)	State Park Access (local)	\$625,000	\$687,500	\$625,000	\$362,500	\$625,000	\$750,000
(3)	Local High-Priority Projects	\$22,953,000	\$4,957,000	\$22,953,000	\$13,008,000	\$0	\$0
(4)	MI Recreational Trails Program	\$1,949,000	\$0	\$1,949,000	\$0	\$1,949,000	\$0
	<i>Subtotal Statewide Local</i>	\$115,662,701	\$96,334,910	\$116,965,526	\$60,379,033	\$95,341,526	\$35,512,333
	Trunkline	\$1,368,535,140	N/A	\$1,064,826,322	N/A	\$995,161,129	N/A

- (1) STP and Bridge—No RABA. Increases at the rate of change of national authorizations. New Commitments includes \$8,486,152 in FY 2002 of carryover funds for Small Urban. Critical Bridge is a GPA based on historical spending levels.
- (2) No change (fixed at \$500K federal per year). New Commitments includes \$62,500 of carryover funds in FY 2002.
- (3) No RABA. Percentages set in TEA-21.
- (4) No change (national authorization and formula fixed).

New Resources:

- The total reflects the larger of either (1) federal funds, plus a 20% nonfederal match, or (2) federal funds, plus dedicated state funds. All of the programs above reflect federal funds, plus a 20% nonfederal match, except for rail/highway, critical bridge, and trunkline.

**TABLE 6 Demonstration of Fiscal Constraint by Federally Assisted Programs:
FY 2002–2004 Base Revenue Estimates (March 2001)**

Michigan Program	FY 2002	
	Total New Resources	Total New Commitments
TMA	\$88,569,704	\$87,633,634
Small MPO	\$25,923,048	\$28,823,398
TEDF-C	\$38,388,000	\$39,981,220
STP Rural/TEDF-D	\$62,812,590	\$61,048,015
Small Urban	\$11,030,000	\$19,516,152
Local Enhancements	\$15,434,175	\$15,434,175
Local CMAQ	\$25,154,000	\$25,154,000
Local Highway Safety	\$6,744,000	\$0
Local Rail/Highway Crossings	\$6,743,000	\$5,555,557
Critical Bridge	\$25,030,526	\$25,030,526
State Park Access	\$625,000	\$687,500
Local High-Priority Projects	\$22,953,000	\$4,957,000
MI Recreational Trails	\$1,949,000	\$0
Trunkline	\$1,368,535,140	\$1,223,409,984
TOTAL	\$1,699,891,183	\$1,537,231,161

Michigan Program	FY 2003	
	Total New Resources	Total New Commitments
TMA	\$82,900,055	\$80,916,631
Small MPO	\$22,791,067	\$20,950,552
TEDF-C	\$33,251,000	\$31,679,941
STP Rural/TEDF-D	\$59,630,558	\$53,286,948
Small Urban	\$11,251,000	\$11,522,200
Local Enhancements	\$15,743,000	\$0
Local CMAQ	\$25,657,000	\$4,900,250
Local Hwy Safety	\$6,879,000	\$0
Local Rail/Hwy Xings	\$6,878,000	\$5,555,557
Critical Bridge	\$25,030,526	\$25,030,526
State Park Access	\$625,000	\$362,500
Local HPP	\$22,953,000	\$13,008,000
MI Recreational Trails	\$1,949,000	\$0
Trunkline	\$1,064,826,322	\$801,411,482
TOTAL	\$1,380,364,528	\$1,048,624,587

(continued)

TABLE 6 (continued) Demonstration of Financial Constraint by Federally Assisted Programs: FY 2002-04 Base Revenue Estimates (March 2001)

Michigan Program	FY 2004	
	Total New Resources	Total New Commitments
TMA	\$83,905,703	\$82,786,549
Small MPO	\$30,142,055	\$28,110,259
TEDF-C	\$33,251,000	\$36,024,941
STP Rural/TEDF-D	\$58,954,824	\$41,915,464
Small Urban	\$11,476,000	\$0
Local Enhancements	\$16,058,000	\$0
Local CMAQ	\$26,170,000	\$4,176,250
Local Highway Safety	\$7,017,000	\$0
Local Rail/Highway Crossings	\$7,016,000	\$5,555,557
Critical Bridge	\$25,030,526	\$25,030,526
State Park Access	\$625,000	\$750,000
Local HPP	\$0	\$0
MI Recreational Trails	\$1,949,000	\$0
Trunkline	\$995,161,129	\$610,309,277
TOTAL	\$1,296,756,237	\$834,658,823

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