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Innovations in Statewide Planning

A Peer Exchange

July 12–13, 2005
Boston, Massachusetts

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A Peer Exchange

July 12–13, 2005
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Transportation Research Board
Statewide Multimodal Transportation Planning Committee

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Introduction

The Transportation Research Board's Statewide Multimodal Transportation Planning Committee (ADA10) has sponsored a peer exchange for the past several years as part of the committee's summer meetings. These annual peer exchanges are funded with the support of the Federal Highway Administration (FHWA). The purpose of the peer exchanges is to bring together practitioners of statewide planning to discuss issues confronting the field in an informal setting over a period of a day and half. Peer exchange topics are discussed and determined by the Committee during the TRB Annual Meeting in January, and an organizing committee is formed.

The 2005 summer peer exchange addressed the topic of innovations in statewide planning. Potential participants were identified by the organizing committee in the spring of 2005. Survey questions were sent out to participants prior to the exchange and a compilation of survey responses was provided a week in advance. This allowed the participants to become familiarized with the topics for discussion at the exchange and to make the best use of the available time.

The first afternoon of the peer exchange was used for a round table discussion on main issues facing each of the participant's transportation agencies. This portion of the exchange set the tone for open discourse that continued throughout the day and a half of events. In addition, the first afternoon was used by researchers on the NCHRP Project 8-36, Task 50 to garner feedback on their research topic, "Impact of Aging Population on Systems Planning and Investment Policies."

The second day of the peer exchange was a discussion on innovations in statewide planning. Each participant was given 20 min to present their state's innovation(s) with questions and discussion throughout. The presentations were loosely based on the responses to the following seven survey questions that were answered by each participant prior to the exchange:

- Please describe an innovative practice in your state's planning process.
- What prompted you to make this change?
- How does it differ from the past?
- Where did you come up with this idea?
- What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result?
- Who are your primary champions or stakeholders? Is there buy-in in the department and/or in other state agencies?
- What risks were involved in adopting this innovation?

Rhonda Young compiled the survey responses, documented the peer exchange discussion, and prepared this report. The contents of the report have been reviewed by the peer exchange participants to ensure accurate reporting of material. The Identification of Key Issues section of this report summarizes the first afternoon's discussion on the issues facing statewide transportation agencies. The Innovations in Statewide Planning section contains information from each participant's survey response and presentation as well as the resulting questions and discussion. Lastly, the Peer Exchange Final Comments section summarizes the main themes from the peer exchange along with a list of potential research needs developed by the participants.

Key Issues in Statewide Transportation Planning

The first afternoon of the peer exchange contained an informal discussion on the main issues facing state transportation planners. Each participant was asked to discuss where their states were currently at with statewide planning and what some of the recent challenges were. The following describes some of the themes that were raised.

POLITICS AND TRANSPORTATION PLANNING CYCLE

The issue of politics and the transportation planning cycle was raised by several participants. It was noted that transportation planners are asked to develop the long-term vision for the transportation system that extends 20 to 30 years into the future. While the cycle for plan updates varies by state all of the participants were engaged at some level of plan development, adoption, or implementation. This long-term vision is in contrast to the political cycle for the state with changes in administrations occurring at times out-of-sync with the transportation plans.

It was also noted that transportation planning is an important component of the state political picture politicians wish to make their mark on the state with transportation infrastructure investments. This often creates pressures for state transportation planning agencies to rework planning processes and in some cases start the planning process from scratch to reflect political changes, thereby creating a discontinuous planning process.

POLICY- VERSUS PROJECT-LEVEL PLANS

The issue of whether a statewide transportation plans should be a general, policy-level document or a specific project or corridor level plan was brought up by several of the participants. Among the participants' states many were policy level plans; others were detailed project level plans with prescriptive formulas. Some states had recently changed from one type of plan to another. There did not appear to be a common perspective on which plan best suited each state's needs. The choice of the plan appeared to be based on factors such as the relationship with the state legislature, agency and district structure, and whether planning was centralized or decentralized within the agency.

FINANCING

Many of the participants stated that financing was an important issue for their state. Many states had a maintenance and preservation first planning priority, which in some cases was legally mandated. Generally maintenance and preservation budgets are utilizing a larger share of the budget each year and could eventually comprise the entire budget if no new funding sources were approved. Planning for capacity projects is becoming of less importance as less money is available for capacity projects.

Innovations in Statewide Planning

Introduction

Each participant responded to the survey questions prior to the peer exchange event and the compilation of the responses were used to provide background material to all participants. During the peer exchange event each participant was given time for a 20 minute presentation and a question and answer period followed.

- Please describe an innovative practice in your state's planning process.
- What prompted you to make this change?
- How does it differ from the past?
- Where did you come up with this idea?
- What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result?
- Who are your primary champions or stakeholders? Is there buy-in in the department and/or in other state agencies?
- What risks were involved in adopting this innovation?

The following section of the report provides each state's survey responses as well as a summary of their presentation. Note that some states discussed more than one innovative practice in their survey and/or presentation. The participants' presentations were given in alphabetical order by state name and are summarized below in that order as well.

Arizona

Use of Regional Corridor Profiles for Long-Range Plan Updates

SURVEY RESPONSES

Please describe an innovative practice in your state's planning process. Corridor studies have been used as the major resource for the state's project-specific long-range plan (LRP). However, only major corridors were studied. For future updates to the LRP, we will be conducting corridor profiles on the entire state highway system, using a regional study approach. In addition, we will use a modified HERS–ST (Highway Economic Requirements System–State Version; appropriately named HERS–ST AZ), performance measurements, and cost effectiveness to evaluate the deficiencies and recommended projects.

What prompted you to make this change? The Arizona Department of Transportation (ADOT) adopted the long-range transportation plan (MoveAZ) on December 18, 2004. The MoveAZ used performance measurements to develop a prioritized ranking of projects. To ensure that the transportation planning division is ready in 2010 we need to revisit our corridor profiles and incorporate performance, cost effectiveness, and data from the entire highway system into the updated MoveAZ.

How does it differ from the past? Our first LRP, adopted in 1994, was a policy plan. A major recommendation of the plan was to conduct multimodal corridor profiles. The state designated 33 priority corridors and over a 5-year period, profile studies were completed on these corridors. The profiles lacked consistency and performance measurements. This inconsistency caused challenges for the MoveAZ study process.

When did you come up with this idea? During the MoveAZ study, our district engineers stated that the lack of data consistency, in the profiles, negatively impacted the prioritization of their district projects. They also felt that there were emerging corridors that should have been studied in the original 33 profiles. Plus the planning staff knows it just makes good common sense to be more inclusive.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? The regional profiles will follow comprehensive profile guidelines to develop the prioritized list of projects for the region. To ensure greater consistency, HERS-ST AZ will be used as the analytical platform. HERS-ST AZ will use 100 sample Highway Performance Monitoring System (HPMS) data with added deficiency tables, thresholds, and performance measures. In addition, our priority factors: mobility, safety, and cost effectiveness will be weighted an additional 40%.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or other state agencies? Our primary champions, for the regional profiles and HERS-ST AZ, are the staff of the transportation planning division. Given that the methodology to be used is consistent with the methodology used in MoveAZ, a conceptual buy-in is in place at the department level and with the regional planning agencies.

What risks were involved in adopting this innovation? Change! Any time something new is introduced—watch out. Also, there is always an element of surprise when you move from the textbook to the practical application—the common sense factor. Another risk is that people have their perceptions as to what's needed and just how important that need is to them. A priority ranking system challenges those perceptions, requiring you to "sell" the results.

PRESENTATION SUMMARY

Arizona's innovative practice is the use of regional planning profiles where ADOT looks at 12 regions instead of just major corridors (Figure 1). The regions were selected by state planners based on rationale so the boundaries do not necessarily correspond to predefined district boundaries. Four regional studies are contracted per year with each study taking 18 months to 2 years to complete. Each study addresses the questions: What are the conditions today? What will the conditions be in the future? And what needs to be done?

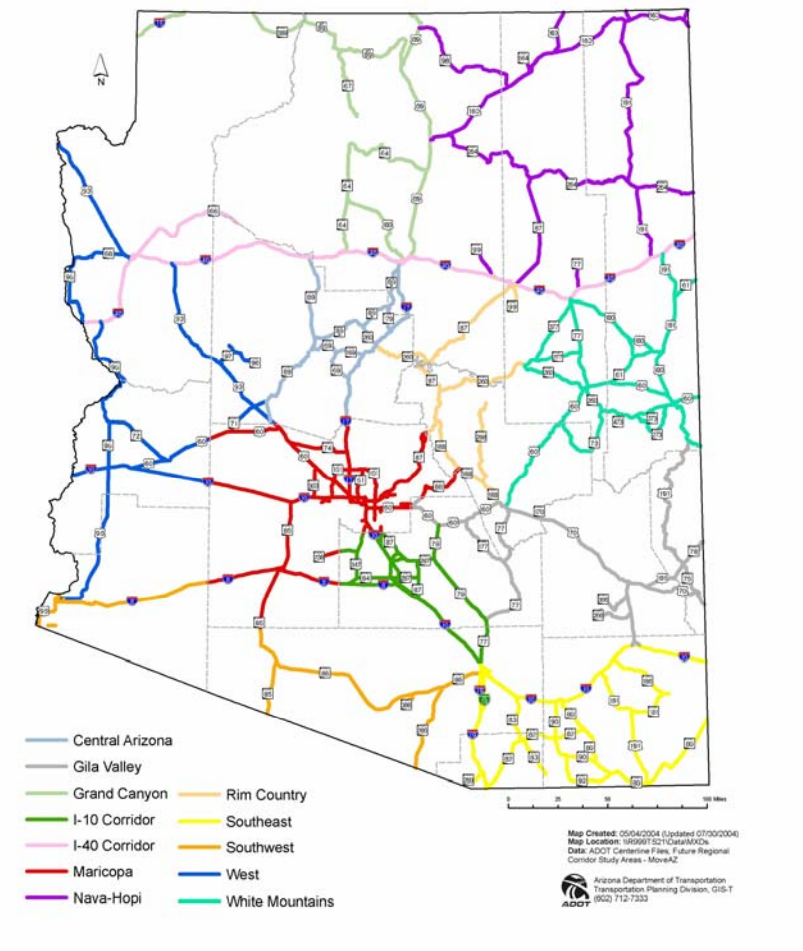


FIGURE 1 Arizona regional transportation profile areas.

A request for proposal (RFP) is prepared for each regional profile for a list of 11 prequalified consultants. The RFP is intentionally not specific about how the plan needs to be done so that creativity and innovation are allowed. Developed guidelines are published to ensure that there is consistency between each study. A modified HERS-ST AZ is used as the base platform for identifying needs, project evaluations, and project rankings.

The following eight specific areas are addressed in the regional profile guidelines:

- Issues: Consistent look at needs but with flexibility to account for regional differences.
- Policies: Must follow the LRP (MoveAZ) and the seven planning factors prescribed by the legislature.
- Data: Use HPMS with 100% sampling and all 98 fields. Disks provided to consultants for use.
- Profile tools: HERS-ST AZ is used for highway project analysis
- Travel demand forecasting: Guidelines address what types of models the consultants should use.
- Performance factors and measures: Factor weights provided. Statewide plan has ranked project list.
- Performance thresholds: Deficiency defined. Projects not evaluated beyond acceptable thresholds.
- Project improvements: HERS-ST AZ identifies projects, which are then bundled. District engineers consulted regarding bundled projects. Ranking of projects performed at the regional level.

The biggest issue of implementing the new regional system was institutional change. Everyone in the agency was held accountable. Agency staff were the project champions who pushed and sold the idea. The greatest resistance was at the district level. Now that the system is in place and the district engineers involved, the resistance has been reduced.

The focus of the discussion after the presentation was on two issues. The first was on the bottom-up versus top-down planning approach (i.e., building up from the regional plans instead of breaking the statewide plan down into districts.) No group consensus among peer exchange participants on what the ideal approach is.

The second issue was how this system related to the metropolitan planning organizations' (MPO's) planning activities. The state agencies in Arizona currently accept the regional MPO plans with no oversight into what their plans contain. Incentive is given for MPOs to be involved by giving priorities to projects that are identified in more than one plan.

California

Implementation of an Extensive Performance Measurement System

SURVEY RESPONSES

Please describe an innovative practice in your state's planning process. Changing multimodal transportation system performance measurement from abstraction to action; California Department of Transportation (Caltrans) has been working with system performance measures in an effort to improve decisions and better explain the benefits of transportation investments for over 7 years. For several years, the California Transportation Commission (CTC) has required that regional transportation planning agencies use performance measures in developing their regional plans and transportation improvement programs. Individual projects were usually analyzed for their individual costs and benefits; however, there has not been a clear and consistent application of measures. Consequently this is no meaningful snapshot or time-series view of how well the system is performing overall, and what affect the types and levels of investments are having on congestion, safety and throughput.

Starting in the Spring of 2004, Caltrans in partnership with the regional transportation agencies and other stakeholder representatives (such as transit providers) has been aggressively developing a set of measures intended to provide a "state of the State" report on transportation system performance. More importantly, Caltrans has begun taking performance based management more seriously, a process in which organizational and system performance measures play a critical role. Most importantly, CTC and the administration have upped the ante by proposing that the regional agencies and Caltrans submit analyses of the impacts of their proposals for the 2006 State Transportation Improvement Program (STIP) on their regional and interregional transportation systems, using a common set of measures to the extent currently possible.

What prompted you to make this change? Regime change. A new governor's administration set a premium of transforming Caltrans into a "mobility" company, and set in motion policy direction emphasizing return on investment, and making investment and operational decisions based on performance criteria.

How does it differ from the past? Without clear management and administration support the department went through the exercise, but it was hard to see where system performance (other than the surrogate of air quality conformity) really impacted programming decisions. Transit service providers had to provide data to the federal government, but that information wasn't really looked at statewide with the intent of improving operator performance.

Now, the administration is expecting Caltrans to implement performance-based management, and more clearly map its activities and resource allocations to organizational and transportation system performance measures as one way of moving to being a mobility company. Similarly, within the span of the last several months, the administration and the CTC have begun sending a clear notice to Caltrans and regional agencies that measurable system performance improvements matter when making major investment decisions.

Where did you come up with this idea? As mentioned previously, Caltrans and other stakeholders and partners have been working with performance measurement for years. However, the idea to elevate the importance of performance measurement in decision making, and actually reporting on the impacts of individual and programs of projects on a regular basis to the public, originated at the administration level.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? In collaboration with partners and stakeholders, a common set of system performance measures is being developed, and a prototype "state of the State" report has been prepared and is being reviewed. We intend to have the first report ready by the end of 2005.

There is a heightened awareness of the need to install and maintain the tools needed to monitor and evaluate system performance and manage the system for optimum performance.

The policy emphasis on system performance, returns-on-investment (ROI) associated with different system improvement strategies, and the examination of where resources are actually allocated has resulted in a doubling of the budget proposed for cost-effective mobility improvement projects in the State Highway Operations Protection Program (the portion of available funds that are dedicated to Caltrans' efforts to improve safety and operations and preserve and maintain state highway investments before funds are made available for capacity and other improvements to the total state and local transportation system).

See also answers to questions above.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or in other state agencies? The administration and the CTC.

What risks were involved in adopting this innovation? Being unable to deliver a set of meaningful measures within the time allowed.

Damaging "partnerships" with regional agencies due to the perception that performance measures would be used to second-guess regional decisions, rather than eventually drive good decisions across the state. This fear became particularly problematic when the CTC and administration decided to require an analysis to accompany Caltrans and regional agency submittals for the 2006 STIP already in preparation. Also, rural agencies are concerned about how measures typically developed for urban settings would be applied to their unique situations, and how measures might work to their disadvantage vis-a-vis the overwhelming transportation needs of the urban areas.

PRESENTATION SUMMARY

Performance Measurement: From Abstraction to Action

The main purpose of implementing the performance measurement system for California is to align Caltrans to common goals and policies. To do this a vision of the three Es were created: prosperous economy, quality environment, and social equity.

California built a conceptual framework for performance measurement that stopped planning for congestion by unconstraining the plan at the beginning. Next a systematic approach for optimizing throughput was applied. All decisions are to be performance-based with the use of

performance indicators to set standards and goals against. Another part of the framework was to act as though ROI matters to the agency by acting like a business. Private capital should be leveraged to supplement public resources. And lastly, integration between transportation, housing, and land use should occur.

The basis for Go California is the hierarchy of actions (Figure 2). State policy should be adopted regionally, particularly if regions are looking for state dollars. Regions should monitor and evaluate the system, maintain and preserve the system before making new investments, manage demand through land use and market-based strategies, employ information technology (IT), improve operations and throughput, and lastly complete and expand the system.

Performance-based management is aimed at transforming Caltrans into a mobility company. One concern is that the rapid change is resulting in a loss of trust from the regional agencies. The action orientation of the agency is making things happen.

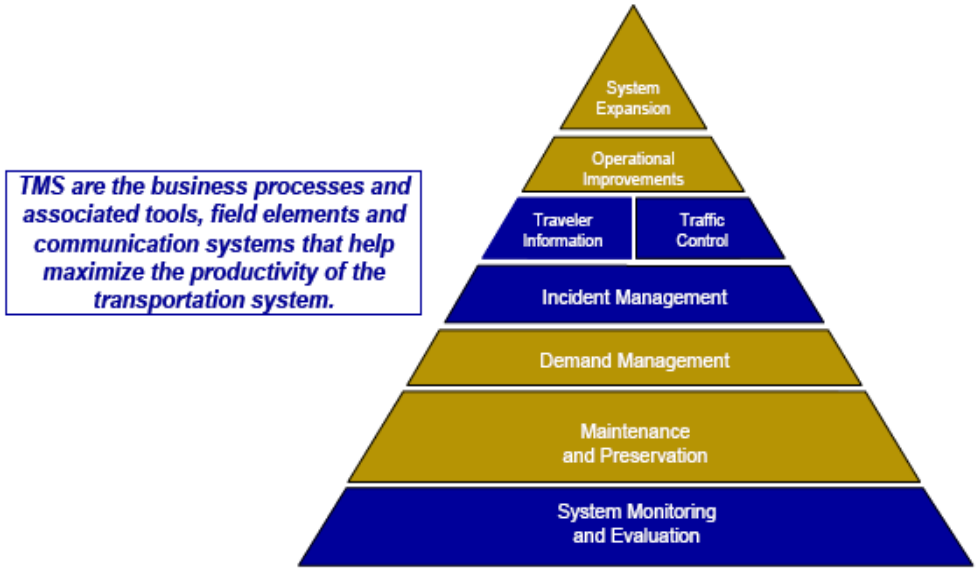


FIGURE 2 Hierarchy of actions.

Kentucky

Kentucky's responses are presented in four categories: (*a*) brief, policy-based plan, (*b*) project scoring system, (*c*) rural transportation planning, and (*d*) project identification form.

SURVEY RESPONSES

Brief, Policy-Based Plan

Please describe an innovative practice in your state's planning process. We hope to limit the plan to 30 to 40 pages with a glossy look. It is being written in a magazine type style. (actually, we are taking the example of other plans, namely South Carolina and Pennsylvania, and developing a similar document.) Previous plans had been bulky and project oriented, and in less of a public oriented style. Document is being developed and has not been finalized at this time.

What prompted you to make that change? With lack of knowledge about reauthorization, shortfalls in available state funding, over-programming of the cabinet's 6-year highway plan and changes in vision and philosophy during and between various administrations/governors, it was obvious that we weren't moving projects from the statewide plan very effectively into programming documents. Having a project specific plan led to unreasonable expectations that projects were going to be implemented short term instead of the reality of long-term needs. Changing visions between, and sometimes during, administrations meant that at least some of the projects in the statewide plan were not going to be programmed. Shortfalls in funding also prevented projects from being moved forward in a timely fashion. These shortfalls meant that project needed to be selected for programming through careful evaluation of the vision and philosophy of the Kentucky Transportation Cabinet (KyTC).

How does it differ from the past? This plan will allow the agency to be more flexible in future programming documents since we can reevaluate projects each programming cycle (every 2 years) to determine which ones best meet our vision and philosophy. Scoring system based on readily available data (see below) will aid in this selection process. New projects recently identified can then compete with projects previously suggested based on their merits and impact on the transportation system.

Where did you come up with the idea? From reviewing other state's statewide transportation plans combined with our own experience with our previous plans.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? We are developing a project selection scoring process (see next innovative process) to help prioritize projects based on the policy/vision of the statewide transportation plan. This system, based on readily available data, will provide at least some transparency to the project programming process.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or other state agencies? The division of planning is the primary champion, but this has gotten broad buy-in from our commissioner of highways as well as our deputy state highway engineer.

What risks were involved in adopting this innovation? Local officials have been used to seeing project identified specifically in our statewide transportation plan. They have previously been able to prioritize projects based on public input alone. Having public input as a part, but not the whole, of the project selection process may be difficult for some to accept. Also, having a heavy reliance on data to score the projects may present difficulties when a project scores poorly but has a great deal of interest from a political standpoint.

Project Scoring System

Please describe an innovative practice in your state's planning process. Project scoring system to evaluate and prioritize unfunded, unscheduled projects for possible future programming.

What prompted you to make that change? Previously projects had been selected for programming based mainly on "knowledge" about the project and public input from local officials. How these projects meet the vision and goals of the cabinet was not explicitly included in the process. Many times the actual need for a project was unknown or uncertain. The project's impact on the performance of the transportation network was also not defined.

How does it differ from the past? This will allow projects to be prioritized and compared on a level basis. It includes the Cabinet's vision (safety, smooth pavements, mobility, economic development) as well as philosophy (maintenance first, better operations second, expand existing roadways third, construct new roads last). It will also allow the cabinet to be more flexible in future programming documents since we can reevaluate projects each programming cycle (every 2 years) to determine which ones best meet our vision and philosophy. Scoring system is based on readily available data [critical crash rates, V/SF (ratio of the peak hour traffic flow compared to the calculated capacity), traffic, truck percentage, public input, economic development factors, etc.] from the Cabinet's or other data sources. New projects recently identified can then compete with projects previously suggested based on their merits and impact on the transportation system.

Where did you come up with the idea? Ohio uses a similar process.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? The need for an automated way to evaluate 2,300+ projects quickly from readily available but diverse, large databases has resulted in development of some program that can do the scoring. The need to change how we define or describe project types to better match philosophy has also been identified.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or other state agencies? The division of planning is the primary champion, but this has

gotten broad buy-in from our commissioner of highways as well as our deputy state highway engineer.

What risks were involved in adopting this innovation? Local officials have previously been able to prioritize projects based on public input alone. Having public input as a part, but not the whole, of the project selection process may be difficult for some to accept. Also, having a heavy reliance on data to score the projects may present difficulties when a project scores poorly but has a great deal of interest from a political standpoint. Developing measures for economic development potential has presented some major challenges. Benefit–cost (B/C) of projects has also been tossed about, but conducting B/C on 2,300+ projects, many of which have little chance of ever being programmed, is a daunting task. We are currently looking at ways of conducting B/C analysis on projects at a very early (conceptual) stage. Establishing a consensus on the weights for the various factors that compose the scoring system has been a constantly evolving process.

Rural Transportation Planning

Please describe an innovative practice in your state's planning process. Work with the commonwealth's 15 area development districts (ADDs) to conduct rural transportation planning services in areas outside the MPO planning boundaries.

What prompted you to make that change? Not really a change as the cabinet has been doing this for quite some time. However, we understand that many states do not have a similar process, if any, for transportation planning in rural areas.

How does it differ from the past? The adds are similar to councils of governments in that they are groups of local governments that band together to obtain services that alone they could not provide. The adds provide many services such as aging services, health services, rural transit, economic development, grant writing, land use planning, and transportation planning to name a few. Since they are tasked with serving local governments, they are ideal for working with local officials. For our program we fund a transportation planner in each ADD. They work with local officials to identify, scope, and prioritize future needs for the transportation system. We had this process in place well before the planning regulations requiring rural consultation. The process has received awards from the National Association of Development Organizations. The ADDs operate in the rural areas much as MPOs do in the metropolitan areas.

Where did you come up with the idea? The process has been in place quite a long time, and we tweak the process as needed.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? We have developed a database of "unscheduled" or "unprogrammed" projects so we have a ready list of projects to be programmed. We have developed a prioritization method for these unscheduled projects to provide input from local officials into the programming process. We maintain a history of the prioritization so we can track how important the project is to local officials. We have developed a project identification form (PIF) (see innovative practice #4) to help scope out these unscheduled needs at the earliest stage so that the true need (or lack

of a need) of the project can be identified and used to help local officials in setting their priorities.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or other state agencies? The division of planning is the primary champion, but this has gotten broad buy-in from the Cabinet as well as local officials.

What risks were involved in adopting this innovation? There is always a risk in allowing others to conduct business on behalf of the Cabinet. However, there is a very close working relationship between the Cabinet and the ADDs. We conduct bimonthly meetings with the add transportation planners to discuss issues and conduct training. There is also the risk of persons trying to bypass this process through the political process, but that has been a minor occurrence.

Project Identification Form

Please describe an innovative practice in your state's planning process. Development of a PIF to conduct preliminary scoping at the earliest concept of a project. It addresses the seven planning factors as well as develops a "purpose and need" for a project based on review of data. It also documents an early cost estimate with the assumptions that estimate was based on. Maps and photographs can be attached to complete the package. A copy of the PIF is in Appendix A.

What prompted you to make that change? The Cabinet has been doing this for quite some time, however, we had not updated the form in many years. The new form includes data that documents the need for a project. A problem statement can then be documented on the form, and that leads to a project description that is based on the problem and not the solution. There are areas on the form to document potential issues that involve right of way, utilities, environment, air quality, or socioeconomics. A cost estimate can then be prepared by assuming a potential solution to the identified issues. The form allows for updates and documents when the updates occurred so that the history of changes can be tracked. The original sponsor of the project is also identified on the form. This form is actually a mini-scoping document. The forms are completed cooperatively between the area development districts, MPOs, highway district offices, and central office division of planning.

How does it differ from the past? PIFs have been used by the Cabinet for some time; however, they were not data based or have a "purpose and need" statement identified on the form. On previous forms the project description was solution based and did not include data to document the need for a project.

Where did you come up with the idea? The Cabinet has interested in environmental stewardship. The division of planning has been involved in environmental streamlining efforts as well as moving the environmental process back into the planning process so that potential issues can be addressed at an earlier stage. This was the next logical step to moving the environmental process further back into the process by identifying purpose and need of a project at its earliest conception as well as identifying any potential issues that could hamper future delivery of a project. These forms can be given to lawmakers, Cabinet administration, or others to help them understand a project, its need, and any issues that could impact the project. It also allows for a history of the project to be documented so that when staff turns over the knowledge is not lost.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? The Cabinet has developed a policy that requires identification of purpose and need of a project at its earliest conception. That policy further requires that the starting point for purpose and need during the preliminary engineering and environmental documentation stage of a project should be pulled from the planning work. The Cabinet is also moving toward need- or problem-based project descriptions for our programming documents instead of solution-based descriptions. In this manner our designers are allowed to develop alternatives in the true sense of environmental analyses instead of being given a solution that they feel compelled to implement regardless of the need or impacts.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or other state agencies? The division of planning is the primary champion, but this has gotten broad buy-in from the Cabinet administrators.

What risks were involved in adopting this innovation? This required an overhaul of over 2,300 PIFs by the ADDs, MPOs, Houston–Donaldson Study Corridor Overlay District, and central office. Some people disliked the lack of a specific solution being provided for each project; however, the form allows for an assumption of a solution so that a reasonable cost estimate can be prepared or so air quality conformity can be determined. The majority of the resistance to completing the forms came from the MPOs (because of issues with their Unified Planning Work Programs). There is also a need to keep the forms updated, and a cycle on which to do that is being developed.

PRESENTATION SUMMARY

Kentucky's new statewide plan was developed as a policy-based plan that is produced is magazine style with summary brochures. One of the reasons for preparing the plan in this manner was that the previous plan was not widely read and it was believed that a shorter, policy plan would have greater public appeal. Another reason for changing the plan format was that funding shortfalls lead to over programming of projects in the past plans, which lead to unrealistic expectations by the public.

Kentucky utilizes a scoring system to prioritize projects in the Vision Implementation Plan. The scoring system uses HPMS data as well as other data sources and is based on visions and goals from the statewide plan. The scoring system allows for objective comparison of projects and is considered a tool in the process and not the final decision itself. The scoring system is automated so that it can be applied to the large number of projects in the project database. Meetings were held with commissioners to establish consensus on the weights and scoring factors used in the goals.

The later part of the presentation addressed Kentucky's Rural Transportation Program. As part of this program a planning position was funded in Kentucky's 15 ADDs. While these planning positions are funded by the state the employers are affiliated with other agencies. These planning positions work with local officials and stakeholders to identify and prioritize projects on the unscheduled projects list. The planners also coordinate the solicitation of public input, which becomes part of the project scoring process.

The PIF is used by Kentucky from the earliest scoping phase of project development. The PIF identifies the problem instead of the solution and is formatted as a purpose and need to the document becomes useful in the National Environmental Policy Act of 1969 (NEPA) process. This format allows for flexibility of solutions down the line by identifying why things need to be done instead of focusing only on the solution. A copy of Kentucky's PIF is in the appendix of this report.

The PIF utilizes data to justify the problem and addresses seven different planning factors. The PIF can also be used to explain the project needs to lawmakers and Cabinet officials. The forms are stored electronically for easy storage and retrieval. Another important feature of the PIF is the tracking of costs through the entire life of the project.

Louisiana

Statewide Travel Demand Model in a Long-Range Plan Update

SURVEY RESPONSES

Please describe an innovative practice in your state's planning process. Use of a statewide travel demand model in updating the Louisiana statewide transportation plan

What prompted you to make this change? Like many states, the Louisiana DOT is constantly approached by groups (some officially designated, some self appointed) seeking funding for large, expensive corridor upgrades (termed "megaprojects"). In most cases, the justification is "congestion relief for overloaded corridors," "economic development," or "hurricane evacuation." Typically, there are no facts, just lofty rhetoric about the benefits. We decided to deal with this issue in the update of the statewide plan in large part by evaluating the proposed projects using a statewide travel demand model.

How does it differ from the past? Previously, we had no tool to quantitatively evaluate the claims by proponents that traffic shifts from congested corridors would occur if their project was implemented. In most cases experienced transportation professionals can look at a proposed project and determine whether or not it is worthwhile; however, this is seldom sufficient in a political environment. We must be able to demonstrate quantitatively whether or not the claims of proponents are accurate.

Where did you come up with this idea? The use of a statewide travel demand model to evaluate proposed megaprojects is likely a permanent addition to Louisiana DOT's planning procedures.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? The use of the statewide model for evaluating proposed megaprojects has not been questioned. Most people don't understand models and are therefore not in a position to question the results. There is a certain intimidation factor that accompanies travel demand models which works to the advantage of the transportation professional.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or in other state agencies? [No response given.]

What risks were involved in adopting this innovation? There have already been requests to use the model for evaluating relatively small projects and even project alignments. The statewide model was never intended for that purpose and will not provide accurate results.

PRESENTATION SUMMARY

Louisiana's multimodal statewide plan was first adopted in 1996. An update to this plan was begun in July of 2000 with a conference in New Orleans and concluded in 2003. Economic

growth for the state was a major focus of the plan. The overall planning process for the Louisiana's statewide plan update is illustrated in Figure 3.

The scope of the statewide plan addresses both freight and passenger transport and includes the following transportation modes:

- Highways,
- Aviation,
- Railroads,
- Trucking,
- Intermodal,
- Ports and waterways,
- Surface passenger (passenger rail and bus),
- Bicycle and pedestrian,
- Public transit, and
- Intelligent transportation systems (ITS).

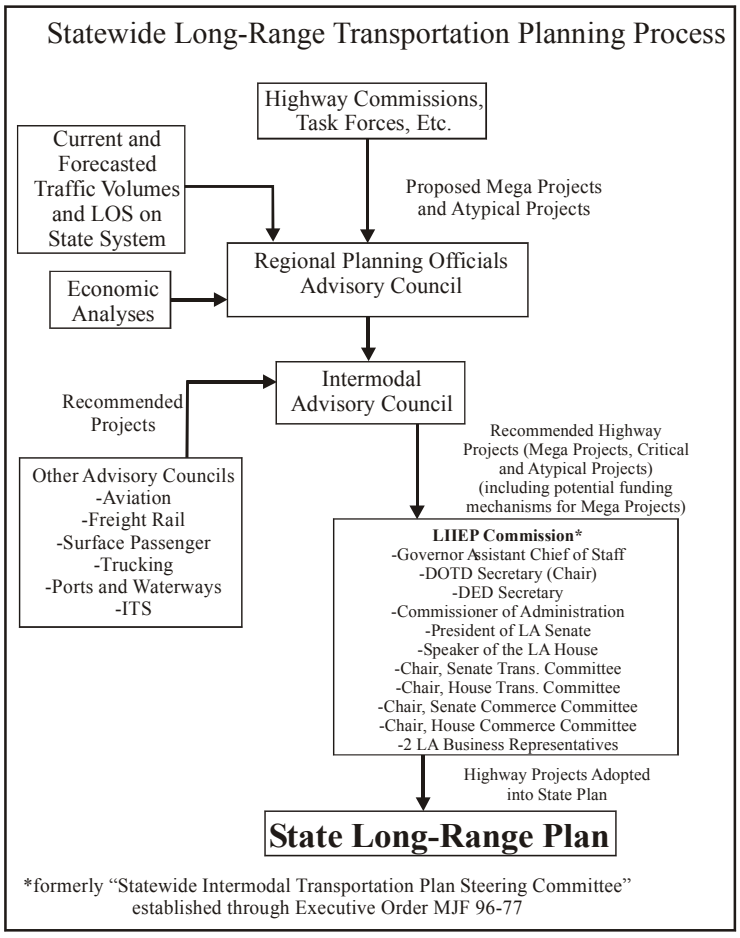


FIGURE 3 Louisiana statewide plan update.

Extensive public involvement was part of the plan update. Outreach efforts included two conferences, a website (www.lastateplan.org), newsletters, eight advisory councils, interest group presentations, eight regional public meetings, and a review and comment period after the initial draft was completed. The eight advisory councils were formed for the plan update in the following focus areas:

- Aviation,
- Freight railroad,
- ITS,
- Ports and waterways,
- Regional planning officials,
- Surface passenger,
- Trucking, and
- Intermodal.

The interest group presentations resulted in 68 highway projects being presented, some within metropolitan area and others not. The total cost of these projects was estimated to be in excess of $16 billion (in 2002 dollars). Each of these projects was evaluated using the statewide or urban travel models. The evaluation criteria was qualitative measures based on the plan goals and objectives and included 10 transportation efficiency factors, 10 economic development factors, seven environment factors, and six safety factors. The same group of people evaluated all projects to ensure consistency in the evaluations.

Louisiana's statewide model uses a macro–micro modeling approach. The macro level includes Interstates and National Highway System roadways throughout the country and captures longer distance traffic traveling to, from or through the model. The macro level contains 520 Bureau of Economic Analysis and county-level zones. Some non-Interstate roads are included in the model in the states adjoining Louisiana and only Interstate roadways in the more distant states. The micro level covers only the state of Louisiana itself and includes over 17,000 mi of roadway and contains 1,313 traffic analysis zones. The micro level is designed to capture intrastate travel. The model uses the TransCAD program and was developed by Wilbur Smith Associates.

The model produces forecasts for average daily traffic on rural state highways. Only auto and truck modes are included in the model. The model is designed to forecast traffic primarily on freeways and arterials. For roadways below that level there is lower confidence in the results.

The model is intended to compliment and support the nine MPO models currently in place throughout the state. The statewide model will provide forecasts for traffic to and through the various MPO areas but will not forecast traffic within the MPO boundaries.

For the 2030 forecast model increases in population and employment were estimated for Louisiana and the adjacent states of Texas, Arkansas, and Mississippi. Increases in internal, internal–external, and through-truck trips were also model inputs. Outputs to the model included the forecasted and current counts on each link as well as rural vehicle miles traveled (VMT) and vehicle hours traveled. Model output can be separated into truck, business, and tourist trips. The Reebie Transearch data was purchased for the base and forecast years to support the truck trip portion of the model.

The statewide modeling tool was used as a response to the 68 projects initiated by the interests groups. Projects were bundled together into “uncompeting” projects (projects that were unlikely to have an effect on each other) and the model was run to evaluate each bundle.

The statewide model was also used to evaluate a gas tax initiative called TIMED for upgrading rural highways to four-lane highways. The 2030 congestion problems were compared with and without this investment initiative and it was found that the initiative had no change to the congestion problems. An analysis was also performed with and without several proposed megaprojects and again it was found that not much improvement was seen.

The question was raised as to whether Louisiana uses the statewide model for maintenance decisions and the response was that it was felt that pavement management system provides more accurate results for these types of decisions. The strength of the model is in making decisions about projects that change the way people travel.

Michigan

Linking of Goal Setting to State Investment Planning

SURVEY RESPONSES

Please describe an innovative practice in your state's planning process. The Michigan DOT (MDOT) has established a process that links goal setting to investment planning that result in the development of an integrated highway capital program and greater than 90% delivery of that program annually. This is achieved through the coordination of numerous programs, organizational alignment, and advances in IT.

The Integrated Call for Projects is an annual, year-long process that includes the coordination of numerous programs and requires a departmentwide partnership effort. This process is the mechanism used to implement state transportation commission policies and align the department with strategic direction as defined by MDOT leadership. The Call for Projects process ensures that progress towards department goals is being made and provides an opportunity for program adjustments if deemed necessary. The Call for Projects includes the following highway capital programs: Road Rehabilitation and Reconstruction Program, Bridge Program, Road Capital Preventive Maintenance Program, Intelligent Transportation Systems Program, Safety Program, Guardrail Replacement Program, Non-Freeway Resurfacing Program, Type II Noise Abatement Program, Carpool Parking Lot Program, Pavement Demonstration Program, and Pump Station Capital Rehabilitation Program.

The process linkage (goal setting to investment planning to program development and delivery) requires commitment at the highest leadership levels, support throughout the organization, teamwork, and continuous two-way communication and monitoring. MDOT has seven regional offices and 26 transportation service centers. This structure is designed in a way that pushes decision making down and out as much as possible yet ensures that individual decisions fully support a common set of departmental goals and that progress towards achieving those goals can easily be monitored.

Project and program data is stored to a corporate database called the Michigan Architectural Project (MAP). Various tools allow MDOT to program, monitor, and report real time project and program information. Other tools assist in scoring and prioritizing projects as well as forecasting future progress towards achieving goals and strategies. These IT advances have provided a mechanism for the department to make strategic decisions and they are key to facilitating the link between goal setting, investment planning, and program delivery.

MDOT's program development process aligns the organization to a common purpose. The organization (top to bottom) understands what is to be achieved within a given timeframe, therefore is better equipped to implement and deliver. Teamwork and shared responsibility is promoted and communication and access to complete, real-time, accurate information is available to all parts of the organization.

MDOT has made several advances in its highway capital Call for Projects process that has facilitated better program integration and improved process linkage. These advances are identified below.

What prompted you to make this change? The change in MDOT's program development process is attributable to a number of factors:

- The need to be more accountable to the public, stakeholders, and the legislature;
- A desire to establish long-term strategic goals and have the ability to monitor progress towards achieving those goals; and
- A desire to develop an aligned organization allowing for efficient development and delivery of the program.

How does it differ from the past? [No response given.]

Where did you come up with this idea? This process and linkage has evolved over a number of years. It has been spearheaded by the department's bureau of transportation planning leadership.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? Several new tools and organizational changes have resulted from the advances made in the call process. They include

Call for Projects/STIP/5-Year Program Timeline A timeline has been developed to facilitate the coordination of the various work programs and identify the interdependencies between the highway capital Call for Projects, the federally mandated STIP, and the department's 5-Year Transportation Program.

This timeline identifies key milestone dates that should be met in order to efficiently develop the programs and ensure approval within state and federally mandated dates. This timeline has been an effective communication tool used throughout the department from MDOT leadership to professional/technical staff involved in day-to-day program development. Some MDOT regions have found this timeline so effective that they have expanded it to a monthly calendar of key dates for their work production in order to meet the timeline milestones.

Administrative Customizable Monitoring and Reporting Tool Effective monitoring and reporting of information is essential to a process that is aligned to link goal setting, investment planning, and program development. An automated tool known as Administrative Customizable Reporting System (ACRS) was developed which allows for customizable monitoring and reporting at the regional and statewide level. Regions differ, programs differ, and emphasis may change so this tool allows the user to set the parameters to generate information helpful to them.

ACRS is linked to MDOT's corporate program/project database, therefore data, reports, and queries are based on real time information. This information allows the Systems Managers to take a proactive view of the programs to ensure that they are on track to deliver the programs consistent with the goals and funding established.

Investment Template One of the most effective tools developed to help link goals to program outcomes is the department's Investment Template. This template establishes the funding provided annually and over a multi-year timeframe to work categories to achieve specific goals or outcomes. The template is approved annually by the director and state transportation commission which sets the direction for the department. Investments are focused where they will most benefit the public consistent with the direction established. Dollars are assigned to program categories, such as road and bridge preservation, safety, and capacity improvements.

The investment strategy (template) is communicated to the organization during the annual integrated call process which provides the mechanism for project selection. Strategic direction and funding targets provided in the call letter forms the basis for project selection and prioritization.

MAP Maintenance System To achieve an integrated approach to preserving our transportation system, work categories identified in the investment template must be coordinated throughout program development. This also means that funding may need to be coordinated in order to achieve efficiencies and wise investing. Each call program has an identified funding target and many cascade down to the regional or sub-group level. As road, bridge, safety, preventive maintenance and other programs are coordinated during the call, there may be a need to adjust program and regional/sub-group budget targets. This may be especially important when a corridor approach is being taken to maximize the efficiency, safety, and effectiveness of our programs.

To facilitate this coordination and accurately account for funding at the program or regional/sub-group level, an automated system known as the MAP Maintenance System (MMS) was developed. This system provides for establishing the budget (investment template) in MDOT's corporate database, increasing/decreasing or transferring target budgets from one program or region to another, and provides the opportunity to document the changed funding.

Systems Manager Role A new role and responsibility, called systems manager, has resulted from the department's decentralized organization and the call process. The decentralized structure was designed in a way that pushes decision making down and out as much as possible yet ensures that individual decisions fully support a common set of departmental goals that can be monitored.

The systems manager is responsible for managing programs either statewide or regional. They are critical to the Call process and help to ensure that alignment from goals to delivery is maintained.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or in other state agencies? MDOT's executive leadership (director, deputy director, chief of staff, chief administrative officer, and concept of operations) and the state transportation commission are the primary champions. There is buy-in within the department. The innovations/advances provide the linkage and method for demonstrating accountability and trust as well as a method for showing that we are good stewards of the transportation system and the dollars that have been entrusted to us.

What risks were involved in adopting this innovation? The primary challenges involved in adopting the process and advances identified were in the area of alignment within the organization and IT development.

The challenge has been moving from an organization that had key person dependencies and bottlenecks and one that primarily focused on pavement and bridges. We have been able to move to a process oriented structure composed of a planning division within the central office which provides guidance, support, and helps ensure goals are realized, systems managers responsible for managing programs, and project managers redefined to be more focused on overall project management from scoping to final audit. In addition, the process has changed

from focusing strictly on pavements and bridges to include other work programs that benefit by having project selection closely coordinated.

Another challenge is to develop automated, yet flexible and user friendly IT systems that support programs developed within many parts of the organization but need to be linked to implement common goals.

PRESENTATION SUMMARY

Michigan has 83 counties, 13 metropolitan organizations located primarily in the lower portion of the state, and 23 rural task forces. Michigan has 120,000 route miles of state highways, county roads, and municipal streets. Off these about 9,700 route miles are state trunkline roads that carry more than 50% of the travel and 75% of the truck travel. There are 11,000 bridges statewide, of which 4,400 on the state trunkline roads, 236 public use airports, 40 commercial harbors, and 21 ferry routes.

In the 1990s MDOT went to a decentralized organization consisting of seven regions and 26 service centers. As part of the decentralization, the decision-making authority was moved down the organizational structure. This process was aimed at providing more local participation in the process. The decentralization process was a significant move for MDOT and required a large cultural shift in the department.

Two issues that arose from this process was the accountability at the local offices and the ability to ensure link to the statewide goals. The process for linking the goals from the statewide LRP to local program development is shown in Figure 4. Two innovations in this process are the investment planning and call for projects.

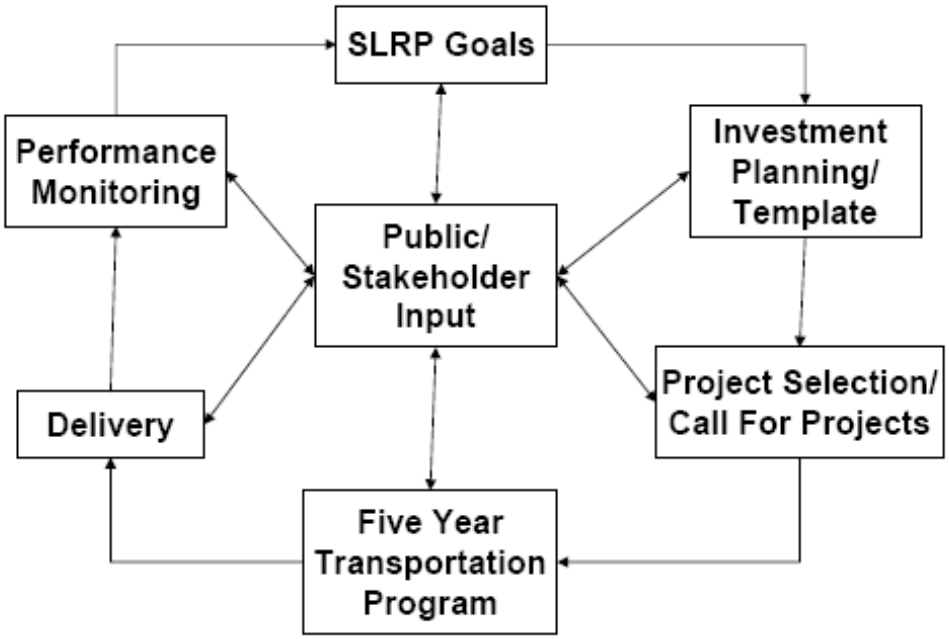


FIGURE 4 Linking goals to program development.

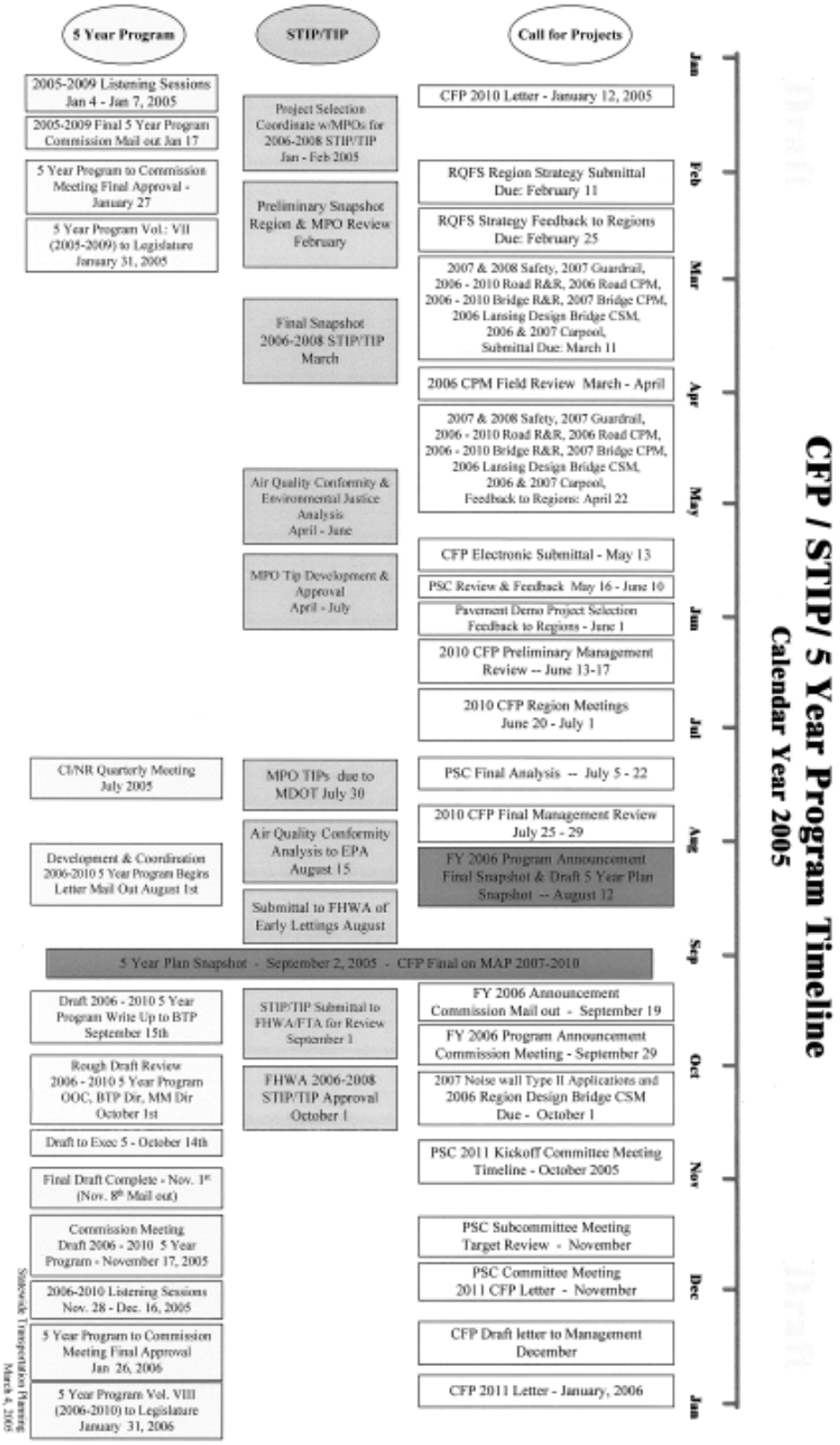


FIGURE 5 Call for projects timeline.

The statewide plan sets goals and priorities for the state but does not select individual projects. The investment planning (or investment template) is tied to specific outcomes. (An example would be the goal of having 90% of pavement segments rated as good or better.) Goals are generated through department and local involvement and are approved by the commission. Forecasting tools show future conditions under different funding scenarios and are used in the goal development process. One question currently being asked in MDOT is whether the customer agrees when a goal is reached since the technical criteria can often be different than customer perception.

The investment template is a simple and easy to understand summary of where funds are being utilized. Funding approval is based on the template spending categories for a 5-year program. Project expenditures tracked through use of detailed reports. The use of the investment template is in line with Michigan's focus on asset management. An example of an investment template can be found in Appendix A.

Michigan's call for projects process follows a detailed timeline (Figure 5). The call for projects timeline is a way for programs to be coordinated and achieved in a timely fashion as well as providing a way to link goals to program development. Some regions have taken the timeline and gone into greater detail for their regional efforts.

Michigan's monitoring and reporting tools are an important feature in creating the link between goals and program development. Each region has a system manager who is responsible for program development. The MMS was shown as an example of the monitoring and reporting tools. (See Appendix A for example printouts.) Reports from the system show how much is allocated and utilized in various main and sub categories and provides the agency with a snapshot of what is happening with the investment template. The system also serves as a mechanism for transferring money in the sub categories and for documenting why that transfer is necessary.

The ACRS is also shown as an example in Appendix A. The ACRS shows the spending authorization by year, category, project manager, etc. From this system you can easily drill down to the project level. Funding levels come from the planning department and are based on what is needed for each region to reach the statewide goals. There is regional equity but spending levels are also based on need. Capacity funding is allocated from the central office but at this point this represents a small portion of the funding since Michigan has adopted a "preservation first" focus.

New Mexico

Integration of NEPA Considerations into Long-Range Planning

SURVEY RESPONSES

Please describe an innovative practice in your state's planning process. New Mexico DOT (NMDOT) is considering implementing a planning process that would better integrate transportation planning with NEPA considerations by mandating a seamless LRP to project implementation process for a significant portion of STIP projects. The key change would involve an integrated planning process to select and analyze for purpose and need, alternatives, and environmental impact. The process is described as integrated because it would require planners to begin the analysis and engineers to finish it. It would involve planners in project development for the first time and engineer specialists in project programming for the first time.

What prompted you to make this change? At present, statewide planning acknowledges environmental concerns as one of the seven planning factors, and project development is responsible for NEPA analysis (often a consultant for projects that are not categorical exclusions). But there is little consideration of NEPA elements in project planning and prioritization process and project development often discovers problems late in the game, resulting in delays and cost adjustments.

How does it differ from the past? [No response given.]

Where did you come up with this idea? The idea developed as a rough concept out of a new NHO 2-day workshop on integrating NEPA and transportation planning conducted at NMDOT in late September 2004. The workshop included people from all operational sections of the department. The idea was refined by a team consisting of the long-range planning coordinator and the environmental unit supervisor.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? If adopted, this concept will represent a significant change in the existing process. In addition, in anticipation of the change, during the latest department reorganization the statewide planning bureau and the environmental engineering bureau were placed in the same division under the same division director. Previously the environmental engineering bureau was part of project development. Requiring projects to be drawn from the LRP would entail a policy change.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or in other state agencies? The champions are still being determined. The initiative is being pursued by NMDOT's statewide planning bureau and environmental engineering bureau.

What risks were involved in adopting this innovation? The normal risks of stirring up anger and resistance have certainly surfaced. There are questions of getting outside resource participation at the earlier timeframe. There is the risk of misused resources (funding and

manpower). If the initiative fails the proponents will probably suffer a loss of reputation and respect for a while.

PRESENTATION SUMMARY

In New Mexico, the long-range multimodal transportation plan is linked to the STIP by an integrated planning process that involves extensive public involvement including the use of citizen conferences where the University of New Mexico's Center for Regional Policy randomly selects citizens to come and talk about regional transportation issues. While the public involvement process is good there are some issues with implementing the results of this process and the concern is that public expectations may be falsely raised.

To address this issue a new integrated planning process is proposed (Figure 6) where projects that go into the STIP must start in the LRP except for some contingent projects such as emergencies, maintenance, some preservation, and special projects. Currently contingent projects make up about 60% of the department's annual program. Projects selected for inclusion into the new process would be by the same agency groups that program the STIP.

The LRP is updated every 4 years. Regional planning organizations (RPOs) perform their own LRPs so there are seven regional plans that vary in content and scope.

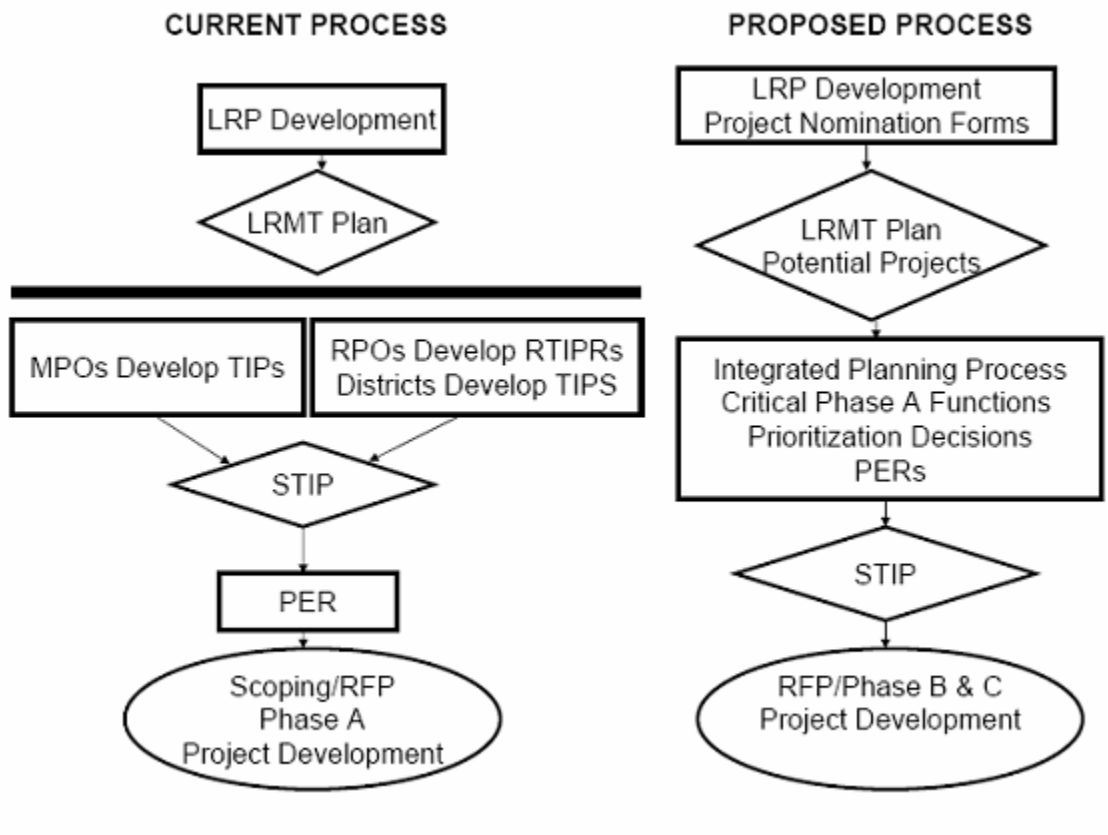


FIGURE 6 New Mexico's planning process.

In Figure 6, the current process shows a barrier between long-range planning and STIP development. The MPOs develop their own transportation improvement plan (TIP), which is a component of the STIP. RPOs develop their regional TIP recommendations, which are only recommendations and are not given as much weight as the MPO projects. In the current process, projects are not reviewed for environmental considerations until a year or so before they are scheduled to be let. At that time a project evaluation report (PER) is done. This short timeline has led to project delays and reprogramming of projects if the costs change significantly. It is also felt that the scope of the projects is difficult to change at this point.

In the proposed process, inclusion in the LRP becomes mandatory for some project types and projects are identified 8 to 10 years out from estimated construction date. A PER is done before projects go into the STIP so the costs and environmental issues are better understood. A sketch-level Phase A Project Development procedure is done where inventories of environmentally sensitive areas are reviewed. After this a project nomination form is completed that includes a site visit and initial work by a technical support engineer. This allows planning to gather data and get involved in project development and gets the planners and engineers working together.

Some of the challenges with implementation came from garnering district support. The fact that a significant portion of the budget was not affected was a selling point. Also there were some concerns that the new process would increase the work load of the planning department.

North Carolina
Cross-Modal Identification of Needs

SURVEY RESPONSES

Please describe an innovative practice in your state's planning process. In 2002, a new tiered methodology was introduced to analyze and categorize transportation needs across all modes in North Carolina. This new tool was referred to as the North Carolina multimodal investment network (NCMIN). Three distinct tiers make up NCMIN, each is illustrated and described below. NCMIN allowed North Carolina DOT (NCDOT) and its partners to consider investment decisions with a mode-neutral context and prompted public policy questions regarding ownership and long-term planning, design, construction, and maintenance of various aspects of the system. This concept was included in the overall plan update, which was adopted by North Carolina's Board of Transportation in September 2004.

What prompted you to make this change? Leadership changes within top levels of management in 1999/2000 created a new momentum to update the STIP and fill it with tools that allowed NCDOT to look beyond historical barriers. In particular NCDOT is falling further behind in its ability to maintain and improve major statewide transportation services and overcome equity decisions encumbered by urban versus rural issues versus allocating funds towards pressing system needs. North Carolina's legislature also directed the department to undertake a study to access the state's 20-plus year needs picture and report back on findings.

How does it differ from the past? North Carolina had a statewide plan that was adopted in 1995. That plan listed a number of goals and strategies to transform the department into a more multimodal planning agency, however very little implementation was accomplished. The 1995 plan lacked decision-making tools and institutional support and eventually lost visibility with outside stakeholders. In contrast this recent plan update is centered on a new policy investment strategy that was built on wide public input and strong institutional support from within NCDOT. Two leadership teams have been created to ensure implementation of the plan is sustained.

Where did you come up with this idea? Department staff worked with a consultant team to generate the initial idea. Early in the plan update it became clear that some type of new organizing method was needed to fully grasp the large assortment of needs within all of North Carolina's transportation system. NCMIN created a tiered approach for transportation based on interest, type of travel served, use and benefit to particular agencies (state, regional, local). Selection criteria helped determine which facilities (such as U.S. highway) fit into which tier. The concept helped fuel the public policy questions that eventually led the department towards a new long-term investment strategy.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? At this point no direct policy or institutional changes have occurred as a result of this innovation. However the needs introduced within NCMIN have caused North Carolina's legislature to pass a series of bills within the last 2 years that approve the use of funds for plan recommended areas such as maintenance, preservation, and modernization. Also more local

stakeholders are interested in new funding and prioritization structures that align with the NCMIN approach. Suggestions have also been made to further examine the role and responsibilities of state and local government within planning, programming, design, construction, and maintenance of the overall transportation system.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or in other state agencies? Primary stakeholders for NCMIN include NCDOT's planning staff and division engineers (who oversee operations and maintenance in 14 divisions) and the state's MPOs and RPOs that oversee planning at a local level. Also two leadership teams have been created to advance implementation, both include members of executive management and the board of transportation. Two other state agencies (department of commerce and department of environment and natural resources) did support the adoption of the plan and subsequent implementation items.

What risks were involved in adopting this innovation? Major risk is raising public policy and institutional rearrangement issues that are not totally in the department's control to change. By adopting this innovation and the overall statewide plan the department sent a strong message to its stakeholders and the legislature that a new business strategy is necessary to better manage the state's transportation system. However the changes that NCMIN suggests are part of a long-term process that may best be incorporated incrementally and in phases and via small-scale action steps. Stakeholders and the public will also be watching to see if and when NCMIN can be utilized to its fullest capabilities.

PRESENTATION SUMMARY

North Carolina's last LRP was adopted in 1995 and lacked momentum after adoption. It was believed a major reason for this was lack of decision-making tools in the plan. For the plan update, the planners were asked to get unanimous approval, develop decision tools, adopt a data driven approach, and have broad involvement. The plan update would determine what the long-term investment priorities would be for the state.

The plan represents a 25 year inventory of needs and utilizes forecasts of currently available revenues. Public and stakeholder interest was solicited through 14 forums held over 2½ years, a major transportation summit, and involvement of over 40 stakeholder groups. In addition to public and stakeholder involvement, the board of transportation, senior NCDOT management, a technical steering committee representing all modes of transportation, division engineering, transportation planning branch staffs, and a consultant team were involved in the plan update effort.

The approach was to utilize public involvement, technical analyses, revenue forecasts, and public policy discussion. The technical analyses were HERS-based and utilized database mining and conversion to costs and total system needs. Standard costs for the agency were developed based on construction costs indices. Staff input was gathered for non-highway needs and was less quantitative than the highway mode. One issue that arose was that HERS is limited to analysis of the existing system.

The analyses determined that there were $84 billion in needs versus only $55 billion in estimated revenue over the next 25 years. This framed the discussion for the last 1½ years of the

plan update process. In order to decide on an investment strategy based on this, a number of key issues were determined. The first was that the department has limited ability to address pressing needs because of spending restriction on state and federal dollars. Because of this, flexibility to direct funds towards the most pressing problems was essential. Another key issue was that over a decade of heavy expansion had led to a large maintenance backlog estimated at $280 million per year with approximately 4,000 million of state highways and 260 bridges being added to the backlog each year. The last key issue identified was the demographic and travel trends for the state. North Carolina continues to be a popular place to live and work and projections show heavy travel and population growths. VMT in the state is currently growing at a rate seven times the budget increase rate.

The needs identified by the plan update process were illustrated by grouping them into a more manageable and understandable tiering structure called the NCMIN. This was a simple way to group facilities or services by similar level of interest and importance, similar type of travel served, similar usage, and benefit to the state. This allowed recognition of the unique contribution of each component versus treating them all the same or by simply dividing them into rural or urban. An additional benefit is that the tiers are mode neutral. Figure 7 illustrates the three tiers.

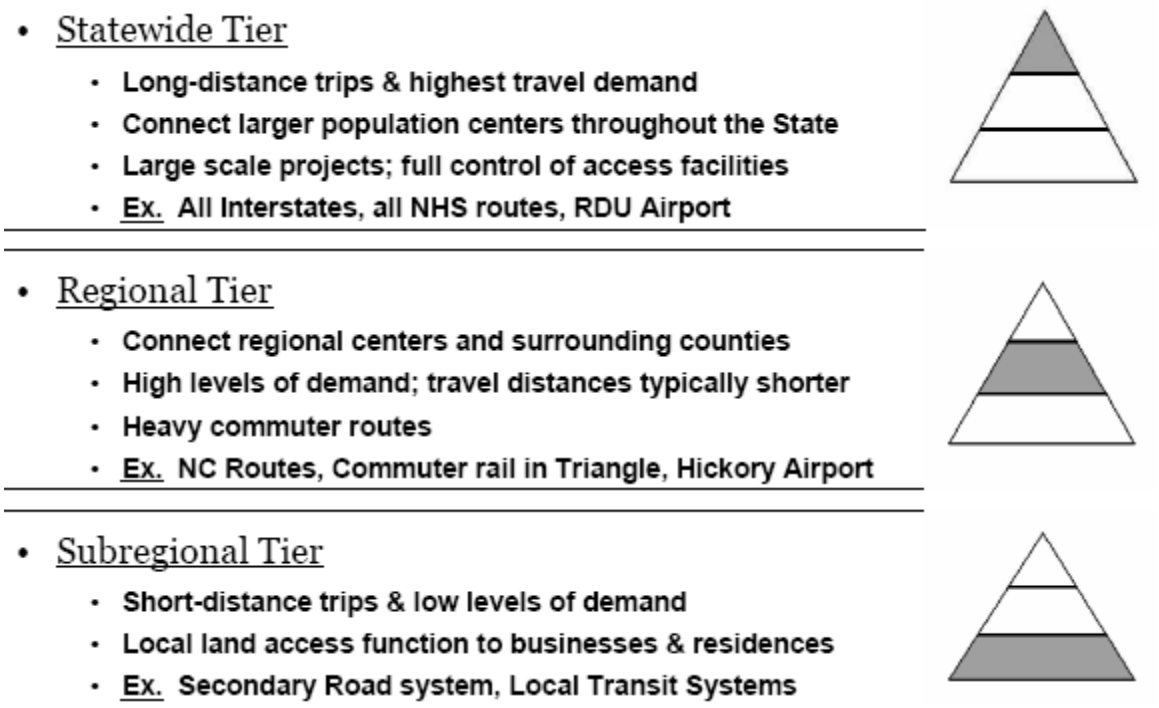


FIGURE 7 North Carolina multimodal investment network tiers.

All needs, regardless of mode, were divvied into three investment categories; maintenance and preservation, modernization, and expansion. Each of these three categories has various subcategories associated with it. A spreadsheet was used to debate tradeoffs between funding priorities for the $55 billion in projected revenues.

Scenarios were also developed to debate the tradeoffs and included a maintenance first scenario, equalization between modes scenario, and a new investment direction scenario, which was the recommended scenario. In this scenario there was increased investment in persevering, upgrading, and modernizing the existing system.

Implementation of the plan includes the use of an implementation team that is a cross section of management staff and a statewide plan committee. Implementation also calls for working with the state legislature to find ways to increase the flexibility of the transportation funds. The plan implementation will be monitored and the plan revised on 2- and 4-year revision cycles. Lastly, a strategic highway corridors concept will be implemented.

Virginia

Virginia's responses are presented in three categories: (*a*) a statewide multimodal office, (*b*) rail funding criteria, and (*c*) use of performance measures.

SURVEY RESPONSES

Multimodal Office

Please describe an innovative practice in your state's planning process. A multimodal office was established by charter signed by all agency heads and the Secretary of Transportation the purpose of the charter "…is to establish a framework to facilitate the development and implementation of multimodal planning among Virginia's transportation agencies."

Commitments Under the leadership of the Secretary of Transportation, the Commissioner of the Virginia DOT (VDOT), and the directors of the Department of Rail and Public Transportation, the Department of Aviation, and the Virginia Port Authority agree to do the following:

1. Advocate multimodal planning solutions to address transportation deficiencies in the commonwealth;
2. Develop and implement programmatic and policy changes within and between their departments that facilitate multimodal planning;
3. Identify and advocate legislative changes that promote multimodal planning;
4. Support the statewide multimodal LRP (VTrans 2025) by integrating its vision, goals, strategies, and recommendations into each department's strategic plans and long range transportation plans;
5. Support the implementation of those activities identified in the action plan; and
6. Commit department staff and financial resources to support the multimodal planning effort.

A technical committee composed of members from each department and a steering committee composed of senior agency executives guides the work of the office.

An action plan was developed to implement multimodal planning. Among the initiatives of the office are

1. A multimodal freight study,
2. A report on the status of implementing the recommendations of VTrans 2025,
3. An inventory and assessment of intermodal facilities,
4. A performance evaluation of the transportation system,
5. Improvements to public and stakeholder involvement, and
6. Refinement of multimodal networks reflecting statewide priorities.

What prompted you to make this change? Legislative requirement to perform LRP and to establish an intermodal office. Part of this push came from parts of the state that would like to see more transit and change the way transit is funded. There is also a deepening concern that transportation funding is insufficient and part of the LRP requirement was a needs study.

How does it differ from the past? This institutionalizes multimodal planning.

Where did you come up with this idea? Legally required to have an intermodal office.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? The action plan for the office.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or in other state agencies? Board members, transit and rail advocates, local and regional planners.

What risks were involved in adopting this innovation? None—if it does not work, will be no worse off than status quo.

Rail Funding Criteria

Please describe an innovative practice in your state's planning process. VTrans 2025 called attention to the lack of funding for both freight and passenger rail and recommended that options be identified "for a sustainable source of state funding with which to support freight rail capital improvements and capital and operating costs of passenger rail." Governor Warner submitted a budget proposal that was approved by the General Assembly to establish a permanent rail fund. Draft policy goals established for the fund include

- Projects must result in public benefit to the commonwealth;
- Projects must be consistent with LRPs;
- Projects must evolve from initial high-impact projects to a multiyear strategic program of projects;
- Projects must have achievable schedules;
- Projects must optimize impact through leveraging;
- Projects must provide additive investment in Virginia's infrastructure;
- Projects must promote or at least not preclude dual- or double-mode access;
- Projects must protect public interest in private facilities;
- Projects must promote congestion relief, economic development, and mobility; and
- At least 90% of the fund must be spent on capital project completion.

Public B/C measures are currently being developed and will include reduction in number of trucks on the highway, reduction in maintenance costs, environmental improvements, increased employment, reduced crash costs, economic/business preservation/expansion, and provision of joint benefits for passenger travel.

What prompted you to make this change? Objective criteria were developed to provide accountability to the public that funds used for freight and passenger rail would be in the public interest.

How does it differ from the past? [No response given.]

Where did you come up with this idea? VTrans 2025 identified a large need for rail and while all other modes have state formula funds, passenger rail does not. It was felt necessary to establish a rail fund in order to improve our multimodal transportation system. The law requires a B/C ratio greater than 1.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? Objective criteria.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or in other state agencies? Rail advocates, rail lines, the port.

What risks were involved in adopting this innovation? Changing the status quo.

Performance Measures

Please describe an innovative practice in your state's planning process. For FY 2007, formal performance measures will be used in the selection of highway projects recommended to the board.

What prompted you to make this change? VTrans 2025 developed performance criteria and the charter required all agencies to adopt its vision, goals, and objectives.

How does it differ from the past? It is more formal and objective.

Where did you come up with this idea? Most states are headed that way.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? More acceptance of using objective performance measures.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or in other state agencies? VTrans 2025 staff.

What risks were involved in adopting this innovation? If the criteria are too complex or not reasonable or transparent, the entire effort could be thrown away.

PRESENTATION SUMMARY

VDOT is responsible for the roadways, bridges, and tunnels in Virginia and has control over secondary roads. The state transportation system is structured into individual departments based on modal divisions with the Commonwealth Transportation Board setting

administrative policies for the departments. Oversight is provided by the Secretary of Transportation, who is a cabinet-level officer in state government. Despite the modal administrative division, the statewide plan is mandated to be multimodal. The latest multimodal LRP was completed in December of 2004.

There is interest in maintaining the multimodal effort that began with the plan. One of the challenges to doing so is the transportation agencies organizational structure and affiliation with the secretary's office. This caused difficulties in staffing and political continuity. To overcome these challenges a multimodal office was created whose purpose is to establish multimodal planning and to support multimodal initiatives. The office is administratively in the DOT and operates out the secretary's office. The office works to find multimodal solutions, implement department changes to facilitate planning, and to advocate legislative changes.

A technical committee was established for the development of the multimodal LRP that has continued past plan adoption. Current appointees to the committee are based on secretary appointments. A steering committee was also created that consists of senior staff members who have the ability to commit funds to the multimodal effort.

An action plan was developed to follow up on the LRP. The action plan includes a multimodal freight study, which was recently begun. Another task in the action plan is to assess intermodal connections addressing function and access issues. Performance evaluation of the system as a unified system is also in the action plan as well as the continuance of stakeholder and public involvement.

A multimodal investment networks (MINs) similar to that of North Carolina's was adopted. This includes the development of multimodal performance measures. For the identification of MINs, criteria was developed. There is consensus on the criteria and on MIN identification and Virginia is currently moving forward with prioritization. There are 11 MINs with each one described by their function.

Washington
New Leadership Role in Public Transportation

SURVEY RESPONSES

Please describe an innovative practice in your state's planning process. The Washington State DOT (WSDOT) created a new role in public transportation by reestablishing itself as a statewide leader through the creation of the office of transit mobility and the regional mobility grant program. The program will focus on facilitating the coordination of planning between transit agencies and local and regional jurisdictions to create common goals, reduce the duplication of services, and increase corridor efficiencies through public transportation.

What prompted you to make this change? Several key events served collectively as the change agent.

1. State funding to transit agencies stopped with the repeal of the motor vehicle excise tax in 2000.
2. There were emerging gaps in service between agencies as a result of the reduced funding levels.
3. WSDOT initiated the update of the Washington Transportation Plan (WTP) using a data-driven approach.
4. Recognition within the highway community that public transportation was a viable and effective way to add capacity on congested corridors.

How does it differ from the past? In recent history, the state role was limited to a modest grant program for small and rural-based agencies with an emphasis on special needs transportation; and WSDOT had little to no role with the larger transit agencies. Previously, with the motor vehicle excise tax, the state had a small role with the larger transit agencies. When the funding source ceased, many transit agencies were faced with reducing service levels to reflect available funds and the state was left without a meaningful role with these larger agencies.

Where did you come up with this idea? Through the joint efforts of state lawmakers, the Washington State Transportation Commission, and transit agencies a solution emerged. These transportation partners concluded that targeted transportation investments aiding transit services and organizational leadership provided by the state could increase the efficiencies of the system, as a whole.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? The Washington State Legislature enacted laws that require the WSDOT to put forth efforts to coordinate transit agency planning with regional corridor planning and improve the efficiencies of corridors through targeted investments.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or in other state agencies? Secretary Doug MacDonald and Washington State Transportation Commission, Representative Ed Murray, chair of the Washington State Legislative Transportation Committee, and the Washington State Transit Association

What risks were involved in adopting this innovation? There were two primary risks: the new funding required new taxation which upset many and required lawmakers to risk much and transit agencies historically planned on shorter horizons independent of other transportation services in their region. The new law forges connections between longer-term transit planning, regional and local planning, ultimately connecting with state planning efforts.

PRESENTATION SUMMARY

Washington is beginning a new phase with regards to the state transportation policy. Previously, the state role in public transportation was limited to a modest grant program for small and rural-based agencies with an emphasis on special needs transportation. Larger transit agencies received funds without involvement from the state. Several years ago a major funding source for these agencies stopped and forced reductions in transit service. With demand continuing to grow for transit service as well as highway services, the state needed a way to implement targeted investments to resolve problem areas on the transportation system. In many areas of the state transit offers solutions that are more economically efficient than highway expansion. This new role of the state in transit issues was first reviewed in the recent update to the WTP.

The 2005 WTP update was a data-driven, analytically grounded plan that was organized into major issue areas with a statewide program and financially constrained investment proposals for each of these areas. Investment and program proposals were prioritized into high, medium, and low priority categories. The major issue areas were

- System preservation,
- Safety,
- Transportation access,
- Strong economy and good jobs,
- Moving freight,
- Health and the environment,
- System efficiencies,
- Bottlenecks and chokepoints, and
- Building future visions.

Current projections for Washington State show that population, employment, VMT, ferry ridership, and transit ridership will all continue to grow while the transportation supply will remain stagnant, increasing congestion, particularly in the urban areas of the Puget Sound, Vancouver, and Spokane.

There are 28 transit systems currently operating in Washington. Many areas of the state also have significant high-occupancy vehicle (HOV) lane system. These HOV lanes are

approaching capacity in major corridors in the Puget Sound area and are beginning to impact the transit operation on those facilities. It is believed that untapped opportunities exist for conserving travel with high-occupancy transit vehicles and facilities. The state legislature saw what was happening during the WTP plan update and created a new Office of Transit Mobility through Substitute House Bill 2124.

The primary goal for the new office was to facilitate the connection and coordination of transit service and planning and to maximize opportunities to use public transportation to improve the efficiency of transportation corridors. The office oversees a Regional Mobility Grant Program that is designed to fund public transportation efficiency projects. Funding for the grant program includes $20 million in 2005–2007 and $40 million for the following biennia. The biennial grant program is coupled with a $30 million park-and-ride program over 16 years. Fundable projects include HOV lanes with direct access ramps, arterial HOV lanes, HOV bypasses and queue jumps, and transit signal priorities.

The Office of Transit Mobility has a planning program that is to play a guiding role in coordinating public transportation service, increasing connectivity, advocating public transportation to increase corridor efficiency, and increase integration of public transportation and the highway system. Some of the strategies for doing this include the following:

- Statewide strategic plan creates common goals for transit agencies and reduces competing plans for cross jurisdictional services;
- Establishing a park-and-ride lot program;
- Encouraging long-range transit planning;
- Providing expertise to improve linkages between regional transportation planning organizations and transit agencies;
- Strengthening policies for including transit and transportation demand management strategies in route development plans, corridor plans, and budgets;
- Recommending best practices for integrating transit and transportation demand management strategies in regional and local land use plans to reduce traffic and improve mobility and access;
- Producing recommendations for public transportation in the WTP;
- Participating in all aspects of corridor planning including freight, ferry, and passenger rail planning;
- Establishing performance objectives and reporting to the secretary quarterly results; and
- Reviewing local and regional transportation plans for the adoption of common goals; the goals should reflect local direction and needs and consistency with the state Growth Management Act.

The Regional Mobility Grant Program aids local government in funding projects. A call for projects or service proposals is issued to transit agencies and local governments each year. A prioritized list is created from these projects and submitted to the state legislature requesting funding. The prioritized list will reflect the department's recommendations as well as all projects and service proposals that were submitted. An annual report to the legislature will be made on the status of projects funded by the program.

The selection of grants will be on a competitive process and the competition will be consistent with the following criteria:

- Enhancing the efficiency of regional corridors in moving people among jurisdictions and modes of transportation,
- Identifying energy efficiency issues, and
- Reducing delay for people and goods.

Wyoming

Planning Corridor Studies and Implementation of Enterprise Resource Planning

Wyoming's responses are presented in two categories: (*a*) planning corridor studies and (*b*) enterprise resource planning.

SURVEY RESPONSES

Planning Corridor Studies

Please describe an innovative practice in your state's planning process. In the late 1990s, Wyoming DOT (WYDOT) started the implementation of planning corridor studies that included environmental elements. Also, a new public involvement policy was implemented to better serve the public (see Appendix). This change was prompted through WYDOT's quality office. Environmental regulations were basically ignored with parts of the public involvement process; therefore, a focus on customer service was implemented. Surveys were sent to all of WYDOT's customers which became the foundation for the new public involvement policy. This strengthened WYDOT's outreach for the planning process. It also strengthened WYDOT's NEPA process. WYDOT no longer took the minimal approach as required in Code of Federal Regulations (C.F.R.). It focused on the actual needs of the customer. Now, on some projects classified as a categorical exclusion, there can be as many as three opportunities for public involvement. This has dramatically improved public relations and WYDOT has received kudos from time to time in doing so.

What prompted you to make this change? WYDOT was experiencing some problems in project delivery due to a lack of early involvement with federal regulatory agencies and certain sectors of the public. Projects with access issues and natural environment issues were improved greatly by implementing the public involvement process.

How does it differ from the past? Normally, brute force would have been employed in dealing with environmental issues where lawyers became involved and the public was not served very well. Bad press would have resulted and relationships would have been hard pressed if not destroyed. Politicians would become involved to bring resolution which seldom occurred. Project delivery would be held up or pulled altogether. Data for informed decision making was hard to share, or could not be produced. Comparative analysis and "what if" decisions really were hard to do, if not impossible. Most DOTs cannot answer the question of "if you only had this much money, what would you do?" And "what would it take in resource allocation to reach a desired level of service for the public?"

Where did you come up with this idea? Basically, for the NEPA process, it was a collective effort from many WYDOT employees who also had professional ties with organizations such as AASHTO and TRB. The public involvement ideas were generated from a WYDOT task force. Then it was rolled to the public for their input and instituted as a policy.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? A public involvement guide was created for WYDOT which serves people from planning, design, construction, and maintenance (see Appendix A). The public involvement was decentralized as a result of this effort too. Public involvement specialists were added in each district who answered directly to the district engineer. These people live in the area and develop relationships with the local public so as to better understand their culture and values. The public involvement specialists would assist WYDOT's headquarter offices in being more effective in community communication. These people would be able to translate bureaucracy into common lay terms. A new operating policy was created as the result of this.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or in other state agencies? FHWA was not a champion with the public involvement process because it focused on customer service first instead of C.F.R. regulations. However, the primary stakeholders are all outside governmental agencies from federal to local levels. The average citizen is also a stakeholder too. The local FHWA office is now on board with the new public involvement process, especially since they suggested the states begin using context-sensitive design processes.

What risks were involved in adopting this innovation? The biggest risk was going against FHWA's better judgment for planning corridor studies and expanded public involvement efforts. The FHWA office preferred to have NEPA tied to the planning process. However, the NEPA document is only good for 3 years when in reality that the plan may wait as long as 10 years for implementation. This meant redoing the NEPA work once again whereas the corridor planning approach would provide a broad perspective of the resources which would not be vulnerable over time. However, FHWA has recognized some of these new benefits over time**.**

Enterprise Resource Planning

Please describe an innovative practice in your state's planning process. The second and most exciting innovation is the implementation of enterprise resource planning combined with enterprise asset management. What WYDOT did was to define our vision for the future and then brought in industry partners to come up with a solution that would cross-cut all programs within the DOT, integrate and share the data inputs, change business practices, and allow WYDOT to make optimized informed investment analysis. To our knowledge this has never been done both in public and private industries. The real key is analysis based on linear assets. This will then allow all partners involved in transportation decisions to "layer" all the inputs and come up with better long-term outputs; i.e., does the STIP address the corridor plan, especially with animal-crash mitigation, migration corridors, community sensitivities, etc? One key result will be the ability to fully analyze system wide results instead of just project by project analysis. We hope to define what a system should act like and then come up with optimized strategies to accomplish this. Another realization early on was that this is a process in motion. Time, people, processes and technology coming together is the key.

What prompted you to make this change? As we envision the future with the ability to cross share data on common platforms, we can marry the financial data with the proposed actions and

see if the investment benefits the public we serve. Currently we do this piecemeal which produces some measurable results, but mostly anecdotal. With an efficient enterprise solution WYDOT will be able to create multiple scenarios that would fit different optimizations of the system. Better science can enhance environmental issues; even political ramifications can be input. WYDOT saw that this is going to be the way of the future and decided to be proactive instead of reactive. For many, this is a novel for a government agency.

How does it differ from the past? Again, instead of being dictated to, WYDOT decided to take the lead and marry people, processes and technology into a cohesive enterprise that could better allocate resource to achieve optimized results (i.e., we want to maximize the investment that the public dollars demands.)

WYDOT also wants to be able to analyze a whole transportation system (Interstate 80 across the state) instead of just a particular project. We need to be able to do comparative analysis of different systems also.

Where did you come up with this idea? It was decided about 3 to 4 years ago that the current financial software was inadequate, could not be supported, and that there was no back up if it went down. Therefore, WYDOT needed to replace the financial package with a common platform database that was fully relational. WYDOT had already instituted a policy to use a corporate oracle database for information sharing. Therefore, the new financial package had to abide by that. Within a year of a committee being formed to look into replacing the financial package, it was realized that more partners were needed. Other DOT program units got involved and then it was realized that we needed to define WYDOT's primary business. WYDOT provides services to the public. Wyoming lives and dies by the roadway. Any package WYDOT secured would need to address the primary link of business: its roadways. It was at this point the selection committee envisioned a package to marry financial data with assets across common platforms in order to reduce the effects "stove-piping." We have to prove that we are wise stewards of the public trust.

What new tools, planning procedures, or policy changes (or other changes) have surfaced as a result? In the area of Enterprise Resource Project/Enterprise Asset Management (ERP/EAM) we are about 90% on the final vision and will be formulating policies and procedures as the process progresses. It even involves changing some of our basic business practices from the way we enter maintenance data to handling time cards, to the way we handle invoices, to the way we analyze systems instead of just projects. WYDOT is now in the implementation process of installing people soft with agile assets. The "go live" date is scheduled for December 31, 2005, plus or minus 1 to 3 months. Once the enterprise system is in place and functional WYDOT can begin completing the circle of learning feedback that involves public involvement, performance measurements, investment analysis, and technology to achieve the best Wyoming-accepted product.

Who are your primary champions or stakeholders? Is there buy-in in the department and/or in other state agencies? For the ERP/EAM effort it was determined early on that we needed the buy-in early on of the governor's office, the WYDOT executive staff and FHWA. First, an actual need for this approach had to be established (in this case the current financial package was no longer supportable and there was no Plan B). Once this was accepted, former

WYDOT Director Sleetor Dover gave the go ahead to develop the overall vision for an enterprise solution and come up with a budget. Then the executive staff brought it to the transportation commission for their buy-in. Once this occurred the selection team was given the go ahead to define what WYDOT's vision was and then ask industry to match it. WYDOT determined what it wanted and went through a selection process (with a lot of hard investigation) that asked industry to marry the technology for enterprise resource planning and enterprise asset management in an integrated package. WYDOT would then make changes internally if necessary to match best business practices. Before the selection decision occurred WYDOT verified again that there was total buy-in from the top. Then all programs within WYDOT were represented on the selection team when all the major software companies did week-long demonstrations of what they could do, based on scenarios of live WYDOT data. Also, a change management process was instituted early on in the process, with regular updates to the WYDOT family. An ERP logo was made called WY@ERP—play on a western character. As can be seen, there is buy-in at the top and it goes through the ranks. The primary champion now is the implementation team that is represented by a cross section of WYDOT culture, with only one executive staff member represented on it.

One interesting aside is that there are a number of other Wyoming state agencies that are very interested in what we are doing. Obviously they are taking a wait-and-see approach, but know that they have to change also. If what we do is successful, and it will be, then these agencies will begin the steps of implementing similar enterprise solutions. To do so, allows greater accountability to the public they serve.

What risks were involved in adopting this innovation? For the enterprise solution many risks were analyzed. The major ones are these:

1. If we did not move forward with an enterprise solution the existing financial package would eventually stop. Since there is no Plan B for the existing system, that was deemed an unacceptable risk. We had to move forward with a replacement that is supportable, even if it were to crash. At least we would have backup data in the even of a crash with the new software.
2. We would continue doing business as usual. Since this is similar to No. 1, it too was deemed unacceptable. WYDOT would not be able to move forward with true asset management, implement best practices in accounting, and really would not be able to institute real significant measures of performance. Also, we would not be able to create a culture of cross-cutting team work. Instead, WYDOT would continue having five separate districts that would operate autonomously instead of cohesively with the rest of the DOT.
3. One of the biggest risks identified was that of managing change and people's expectations. This project represents culture changes within the DOT and the way it will interact with the public and other agencies.
    a. It also represents a paradigm shift in the way we treat investment analysis, i.e., early interdiction to facilitate continuous improvement of deterioration models that optimize based on system wide analysis. This risk is mitigated by a continuous cycle of learning feedback.
    b. Another concern was the possibility of loss of human resource and how to reallocate existing resource. This issue is being addressed through training, cross training, and possibly job realignment, but no loss of employment.

PRESENTATION SUMMARY

Wyoming is implementing an ERP that will bring the agency's data into a common platform. The ERP project is a new system for core financials and asset management programs based on a geographic information system capable, relational database. The motivations for implementing the new system were to replace an old legacy system and to assimilate the latest in asset management tools. The idea is to optimize for the future and become an asset centric agency. The process for implementing the ERP system was first to map our WYDOT's current business processes and to determine system requirements. The focus was on implementing a quality project.

The ERP system is based on an asset management vision where inputs and tools provide data for decisions that yield results that help achieve the agencies goals (Figure 8) using off-the-shelf software.

A major motivation for implementation was being able to connect data to department's key objectives. The system will be implemented in stages with initial and future capabilities identified (Table 1). Wyoming expects to see cost saving in the management of their system through the use the ERP. In addition, the ERP project will hopefully generate organizational integration as well as the data integration.

One of the keys to ERP success will be in the district knowledge and acceptance of the product.

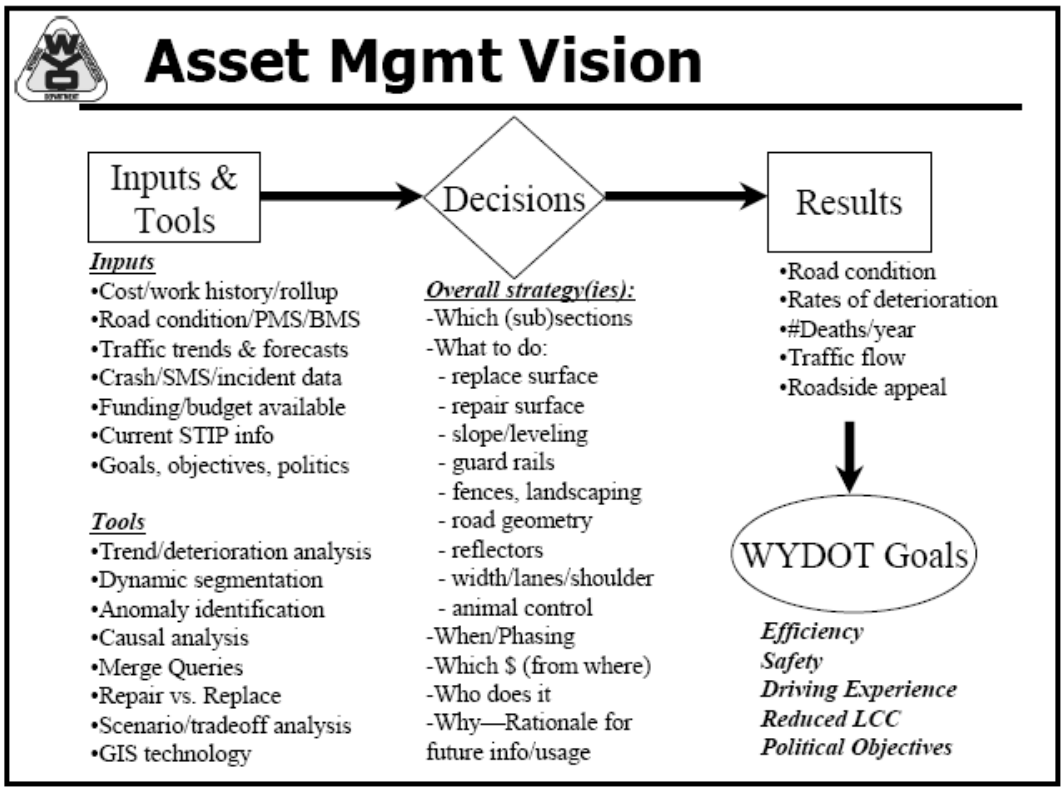


FIGURE 8 WYDOT's asset management vision.

TABLE 1 Enterprise Resource Project Capabilities

Current Capabilities	Future Capabilities
Maintenance data are input by maintenance section.	Data are captured per location (point) or mile marker range.
Maintenance information are available at the maintenance section level.	Information is available at a very high degree of resolution.
PMS, BMS, SMS are used in planning analysis, but not easily shared.	Data are fully accessible and shared between WYDOT Programs.
Road sections with the worst condition generally receive priority.	Target road segments with greatest need in terms of level-of-service and long-term cost considerations.
No ability to analyze investment dollars versus improvements in road condition.	Ability to analyze the roadway improvement versus investments made.
GIS is utilized for portraying assets on a map.	GIS is an integral part of data queries and analysis.

Peer Exchange Final Comments and Identification of Research Needs

The peer exchange on innovations in statewide planning contained a wide variety of innovative practices that ranged from planning techniques, to organizational structure, to software tools. It is hoped that the presentation of these techniques in this report will be of aid to other planning organizations confronted with similar issues. In addition to presenting techniques, the peer exchange participants identified research needs, which are discussed in the following section.

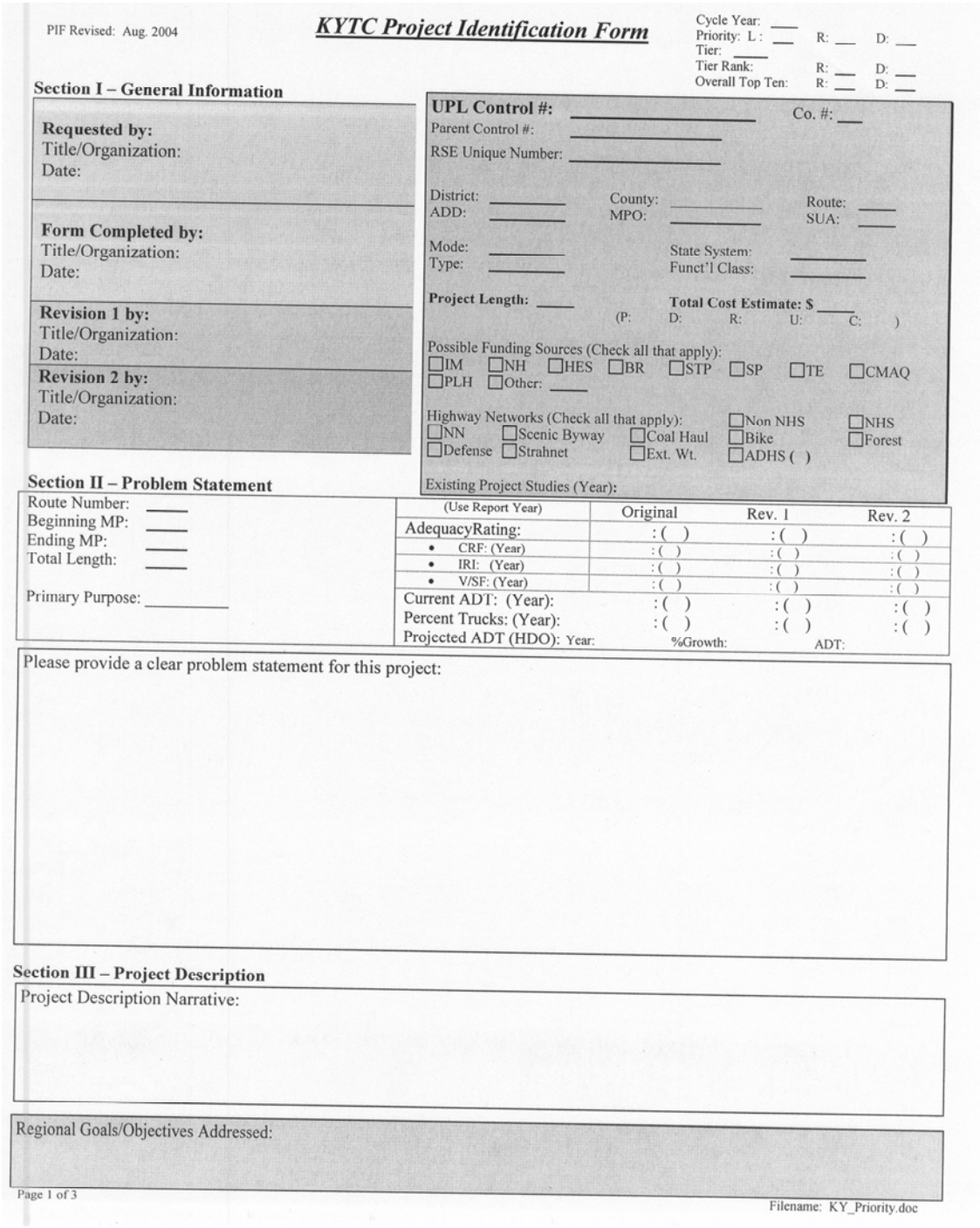
IDENTIFICATION OF RESEARCH NEEDS

After completion of each state's presentation a short wrap-up discussion was held focusing on the identification of research needs for statewide planning. Below is the list resulting from this discussion.

- Study on ROI methodology that captures economic development and private benefits and leverages.
- Best practices and best case studies on programmatic investment strategies that show how agencies are determining what levels of funding go into each program category.
- Best practices on what is being done to break the state into smaller areas (long, linear versus short, regional blocks).
- How are corridor studies accommodating future land use, maintenance issues, and multimodal opportunities?
- A review of how states are using HERS. Are states finding it easy to use? Robust enough? What data is needed?

APPENDIX A

Sample State Documents



PIF Revised: Aug. 2004

KYTC Project Identification Form

Cycle Year: ___
Priority: L: ___ R: ___ D: ___
Tier: ___
Tier Rank: R: ___ D: ___
Overall Top Ten: R: ___ D: ___

Section I – General Information

Requested by:
Title/Organization:
Date:

Form Completed by:
Title/Organization:
Date:

Revision 1 by:
Title/Organization:
Date:

Revision 2 by:
Title/Organization:
Date:

UPL Control #: _____ Co. #: ___
Parent Control #: _____
RSE Unique Number: _____

District: _____ County: _____ Route: ____
ADD: _____ MPO: _____ SUA: ____

Mode: _____ State System: _____
Type: _____ Funct'l Class: _____

Project Length: ____ **Total Cost Estimate: $** ____
(P: D: R: U: C:)

Possible Funding Sources (Check all that apply):
☐IM ☐NH ☐HES ☐BR ☐STP ☐SP ☐TE ☐CMAQ
☐PLH ☐Other: ____

Highway Networks (Check all that apply):
☐NN ☐Scenic Byway ☐Coal Haul ☐Non NHS ☐NHS
☐Defense ☐Strahnet ☐Ext. Wt. ☐Bike ☐Forest
☐ADHS ( )

Existing Project Studies (Year):

Section II – Problem Statement

Route Number: ____
Beginning MP: ____
Ending MP: ____
Total Length: ____

Primary Purpose: _____

(Use Report Year)	Original	Rev. 1	Rev. 2
AdequacyRating:	: ( )	: ( )	: ( )
• CRF: (Year)	: ( )	: ( )	: ( )
• IRI: (Year)	: ( )	: ( )	: ( )
• V/SF: (Year)	: ( )	: ( )	: ( )
Current ADT: (Year):	: ( )	: ( )	: ( )
Percent Trucks: (Year):	: ( )	: ( )	: ( )
Projected ADT (HDO): Year:	%Growth:	ADT:	

Please provide a clear problem statement for this project:

Section III – Project Description

Project Description Narrative:

Regional Goals/Objectives Addressed:

Page 1 of 3

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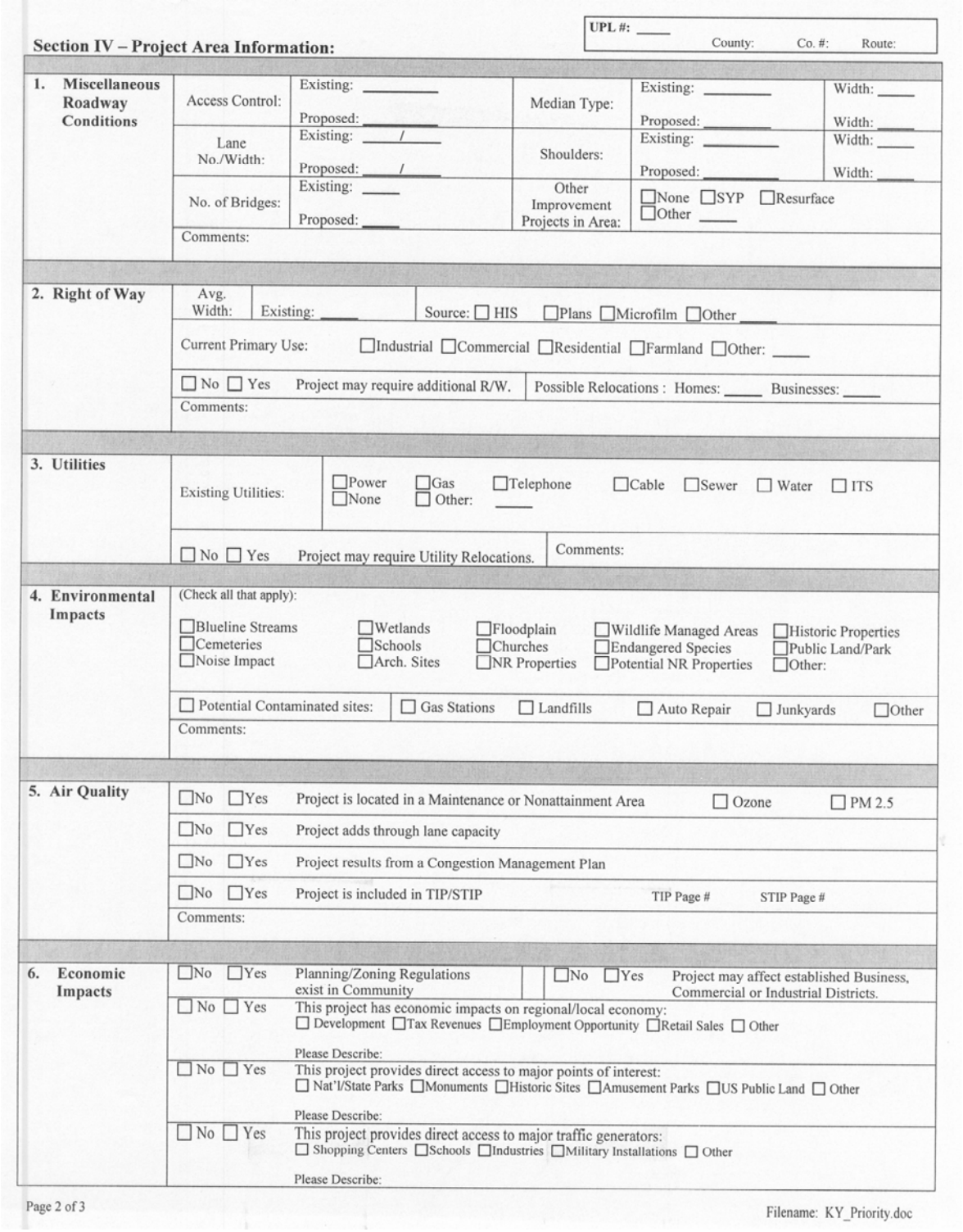
(*continued*)

FIGURE A-1 Kentucky Transportation Cabinet's PIF.



UPL #: ____ County: Co. #: Route:

Section IV – Project Area Information:

1. Miscellaneous Roadway Conditions

Access Control:	Existing: _____ Proposed: _____	Median Type:	Existing: _____ Proposed: _____	Width: ____ Width: ____
Lane No./Width:	Existing: ____/____ Proposed: ____/____	Shoulders:	Existing: _____ Proposed: _____	Width: ____ Width: ____
No. of Bridges:	Existing: ____ Proposed: ____	Other Improvement Projects in Area:	☐None ☐SYP ☐Resurface ☐Other ____	

Comments:

2. Right of Way

Avg. Width: Existing: ____ Source: ☐ HIS ☐Plans ☐Microfilm ☐Other ____

Current Primary Use: ☐Industrial ☐Commercial ☐Residential ☐Farmland ☐Other: ____

☐ No ☐ Yes Project may require additional R/W. Possible Relocations : Homes: ____ Businesses: ____

Comments:

3. Utilities

Existing Utilities: ☐Power ☐Gas ☐Telephone ☐Cable ☐Sewer ☐ Water ☐ ITS ☐None ☐ Other: ____

☐ No ☐ Yes Project may require Utility Relocations. Comments:

4. Environmental Impacts

(Check all that apply):

☐Blueline Streams ☐Wetlands ☐Floodplain ☐Wildlife Managed Areas ☐Historic Properties
☐Cemeteries ☐Schools ☐Churches ☐Endangered Species ☐Public Land/Park
☐Noise Impact ☐Arch. Sites ☐NR Properties ☐Potential NR Properties ☐Other:

☐ Potential Contaminated sites: ☐ Gas Stations ☐ Landfills ☐ Auto Repair ☐ Junkyards ☐Other

Comments:

5. Air Quality

☐No ☐Yes Project is located in a Maintenance or Nonattainment Area ☐ Ozone ☐ PM 2.5

☐No ☐Yes Project adds through lane capacity

☐No ☐Yes Project results from a Congestion Management Plan

☐No ☐Yes Project is included in TIP/STIP TIP Page # STIP Page #

Comments:

6. Economic Impacts

☐No ☐Yes Planning/Zoning Regulations exist in Community

☐No ☐Yes Project may affect established Business, Commercial or Industrial Districts.

☐ No ☐ Yes This project has economic impacts on regional/local economy:
☐ Development ☐Tax Revenues ☐Employment Opportunity ☐Retail Sales ☐ Other
Please Describe:

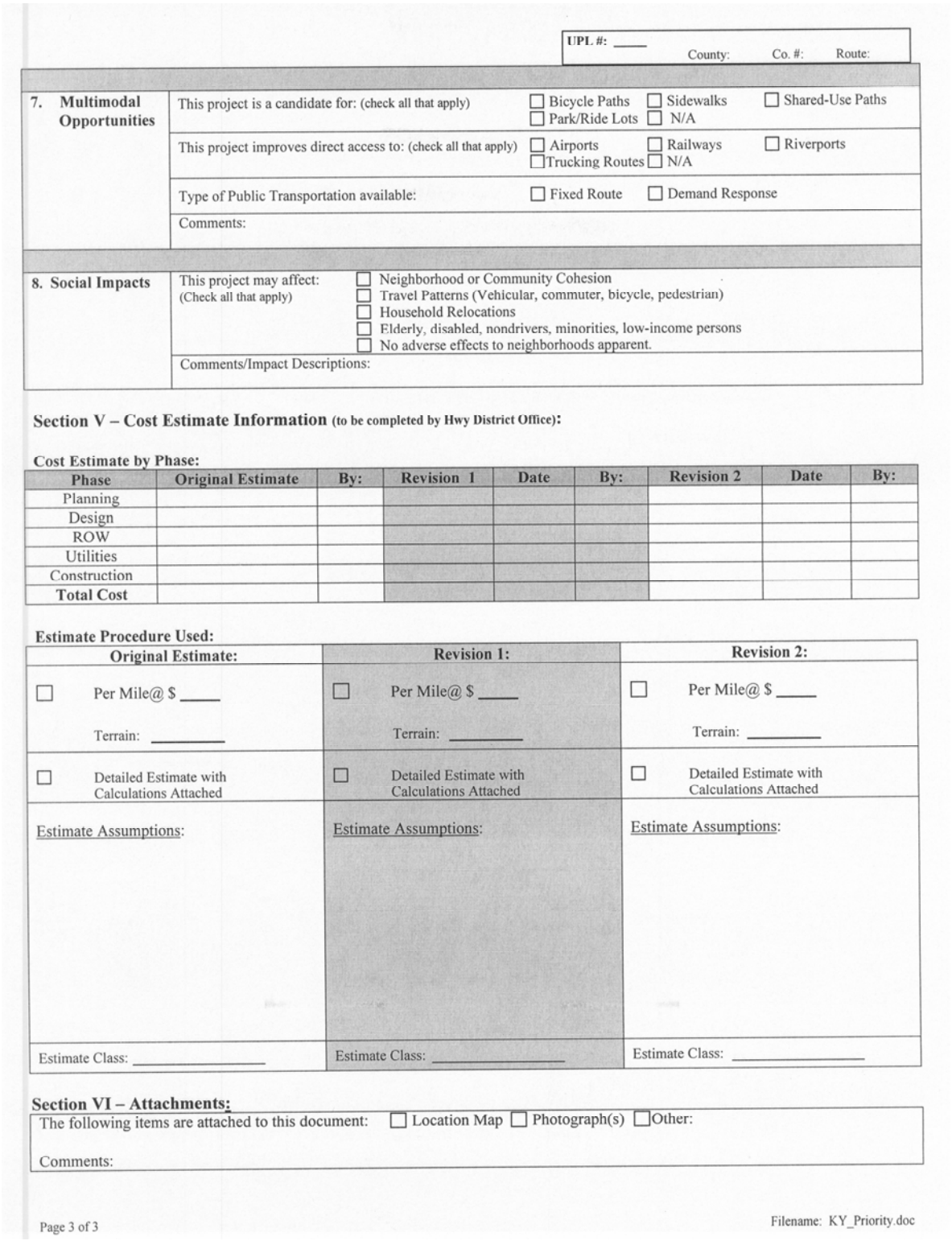
☐ No ☐ Yes This project provides direct access to major points of interest:
☐ Nat'l/State Parks ☐Monuments ☐Historic Sites ☐Amusement Parks ☐US Public Land ☐ Other
Please Describe:

☐ No ☐ Yes This project provides direct access to major traffic generators:
☐ Shopping Centers ☐Schools ☐Industries ☐Military Installations ☐ Other
Please Describe:

Page 2 of 3 Filename: KY_Priority.doc

(*continued*)

FIGURE A-1 (*continued*) **Kentucky Transportation Cabinet's PIF.**



UPL #: ____ County: Co. #: Route:

7. **Multimodal Opportunities**	This project is a candidate for: (check all that apply)	☐ Bicycle Paths ☐ Sidewalks ☐ Shared-Use Paths ☐ Park/Ride Lots ☐ N/A
	This project improves direct access to: (check all that apply)	☐ Airports ☐ Railways ☐ Riverports ☐ Trucking Routes ☐ N/A
	Type of Public Transportation available:	☐ Fixed Route ☐ Demand Response
	Comments:	
8. **Social Impacts**	This project may affect: (Check all that apply)	☐ Neighborhood or Community Cohesion ☐ Travel Patterns (Vehicular, commuter, bicycle, pedestrian) ☐ Household Relocations ☐ Elderly, disabled, nondrivers, minorities, low-income persons ☐ No adverse effects to neighborhoods apparent.
	Comments/Impact Descriptions:	

Section V – Cost Estimate Information (to be completed by Hwy District Office):

Cost Estimate by Phase:

Phase	Original Estimate	By:	Revision 1	Date	By:	Revision 2	Date	By:
Planning								
Design								
ROW								
Utilities								
Construction								
Total Cost								

Estimate Procedure Used:

Original Estimate:	Revision 1:	Revision 2:
☐ Per Mile@ $ ____ Terrain: _____	☐ Per Mile@ $ ____ Terrain: _____	☐ Per Mile@ $ ____ Terrain: _____
☐ Detailed Estimate with Calculations Attached	☐ Detailed Estimate with Calculations Attached	☐ Detailed Estimate with Calculations Attached
Estimate Assumptions:	Estimate Assumptions:	Estimate Assumptions:
Estimate Class: _____	Estimate Class: _____	Estimate Class: _____

Section VI – Attachments:

The following items are attached to this document: ☐ Location Map ☐ Photograph(s) ☐ Other:

Comments:

Page 3 of 3 Filename: KY_Priority.doc

FIGURE A-1 (*continued*) **Kentucky Transportation Cabinet's PIF.**

MICHIGAN DEPARTMENT OF TRANSPORTATION
FY 2005 CAPITAL HIGHWAY PROGRAM

REPAIR & MAINTAIN ROADS AND BRIDGES	
REPAIR AND REBUILD ROADS	
Preserve Rehabilitation & Reconstruction	$ 437.6 million
Non-Freeway Resurfacing	$15.0 million
Passing Relief Lanes	$14.6 million
TOTAL REPAIR AND REBUILD ROADS	**$ 467.2 million**
MAINTENANCE ACTIVITIES	
Routine Maintenance	$ 253.7 million
Capital Preventative Maintenance (CPM) - Road	$ 103.3 million
TOTAL MAINTENANCE	**$ 357.0 million**
BRIDGES	**$223.6 million**
TOTAL REPAIR & MAINTAIN ROADS & BRIDGES	***$ 1,047.8 million***
CAPACITY IMPROVEMENTS (CI) AND NEW ROADS (NR)	
Capacity Improvements [4]	$ 246.6 million
Research Capacity Improvements	$ 4.3 million
New Road Construction	$ 4.5 million
Research New Roads	$ 0.5 million
TOTAL CI & NR	***$ 255.9 million***
OTHER	
Safety Programs	$ 58.0 million
Federal Mandates [1]	$ 82.4 million
TEDF[2]	$ 1.3 million
State Programs [3]	$ 50.7 million
TOTAL OTHER	***$ 192.4 million***
FY 2005 HIGHWAY PROGRAM	***$ 1.496 billion***

1. Federal Mandates include CMAQ, Enhancement, Railroad Crossing, and other programs.
2. TEDF is the Transportation Economic Development Fund Category A for state trunkline routes.
3. State programs include Advanced ROW acquisition, Michigan Institutional Roads program, Non-discretionary "M" Program, Program Development and Scoping, State Railroad Crossing program and Jurisdictional Transfers.
4. A substantial portion of Capacity Improvement projects includes the preservation of the existing road. Approximately $142 million (57%) of the Capacity Improvement construction funding is for preserving the existing road adjacent to the new lane.

(*continued*)

FIGURE A-2 Michigan DOT's investment templates.

ESTIMATED 5-YEAR CAPITAL OUTLAY PROGRAM (in millions)

Update as of 11/22/04

	FY 2004[1]	FY2005 - FY2009						
		FY 2005[2] Announced	FY 2006[3]	FY2007[3]	FY 2008[3]	FY 2009[3]	5 Year TOTAL	5 Year Average
REPAIR & REBUILD ROADS PROGRAM								
Rehab & Reconst.	$407.83	$437.60	$429.10	$428.10	$381.10	$376.10	$2,052.00	$410.40
Non-Freeway Resurfacing	$15.40	$15.00	$19.00	$21.00	$0.00	$0.00	$55.00	$11.00
Passing Relief Lanes	$16.50	$14.60	$10.00	$10.00	$10.00	$0.00	$44.60	$8.92
Total Repair and Rebuild Roads	$439.73	$467.20	$458.10	$459.10	$391.10	$376.10	$2,151.60	$430.32
MAINTENANCE ACTIVITIES								
Routine Maintenance[4]	$234.00	$253.73	$261.08	$268.66	$276.45	$284.46	$1,344.38	$268.88
Capital Preventive Maint. (CPM) - Road	$77.00	$103.30	$94.30	$100.40	$89.00	$89.00	$476.00	$95.20
Total Maintenance	$311.00	$357.03	$355.38	$369.06	$365.45	$373.46	$1,820.38	$364.08
BRIDGES (Rehab, Replace, & CPM)	$174.96	$223.60	$193.00	$193.00	$185.00	$185.00	$979.60	$195.92
TOTAL REPAIR & REBUILD ROADS AND BRIDGES	**$925.69**	**$1,047.83**	**$1,006.48**	**$1,021.16**	**$941.55**	**$934.56**	**$4,951.58**	**$990.32**
CAPACITY IMPROVEMENTS* AND NEW ROADS								
Capacity Improvements	$156.83	$246.60	$34.71	$10.18	$0.58	$0.00	$292.07	$58.41
Research & Development, Capacity Improvement	$27.47	$4.27	$4.40	$0.00	$21.70	$0.00	$30.37	$6.07
New Roads	$47.36	$4.50	$4.70	$0.30	$0.00	$0.00	$9.50	$1.90
Research & Development, New Roads	$1.30	$0.46	$5.00	$5.00	$3.00	$0.00	$13.46	$2.70
TOTAL CAPACITY IMPROVEMENT & NEW ROADS	**$232.96**	**$255.83**	**$48.81**	**$15.48**	**$25.28**	**$0.00**	**$345.42**	**$69.08**
SAFETY PROGRAMS	$57.00	$58.00	$58.00	$58.00	$50.00	$50.00	$274.00	$54.80
Other Signs	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$75.00	$15.00
Markings	$11.00	$13.00	$13.00	$13.00	$13.00	$13.00	$65.00	$13.00
Guardrail	$6.00	$2.00	$2.00	$2.00	$2.00	$2.00	$10.00	$2.00
Signals	$9.00	$9.00	$9.00	$9.00	$9.00	$9.00	$45.00	$9.00
Safety Programs	$16.00	$19.00	$19.00	$19.00	$11.00	$11.00	$79.00	$15.80
OTHER								
Federal Programs	$75.44	$82.35	$81.25	$82.68	$80.29	$80.38	$406.96	$81.39
CMAQ	$20.80	$21.70	$21.70	$21.70	$21.70	$21.70	$108.50	$21.70
Enhancement	$20.80	$21.70	$21.70	$21.70	$16.70	$16.70	$98.50	$19.70
Intelligent Transportation Systems (ITS)	$7.00	$2.29	$8.46	$9.78	$12.11	$11.90	$44.54	$8.91
Roadsides	$12.00	$11.58	$10.00	$10.00	$10.00	$10.00	$51.58	$10.32
Weigh Stations	$1.00	$1.00	$1.00	$1.00	$1.00	$1.00	$5.00	$1.00
Federal RR Xings	$4.50	$5.50	$5.01	$6.89	$6.16	$6.30	$29.86	$5.97
Wetland Pre-Mitigation	$4.00	$4.00	$2.50	$2.40	$2.40	$2.40	$13.70	$2.74
Training - Bureau of Highways	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$15.00	$3.00
Recreational Trails	$1.94	$2.00	$2.06	$2.13	$2.20	$2.27	$10.66	$2.13
Noise Abatement	$5.00	$9.70	$5.00	$5.00	$5.00	$5.00	$29.70	$5.94
TEDF - Category A	$3.00	$1.30	$2.00	$2.00	$2.00	$2.00	$9.30	$1.86
State Programs (formerly Property Management)	$51.70	$50.66	$56.43	$65.55	$56.60	$57.68	$287.55	$57.51
Advance ROW Acquisition	$7.00	$7.00	$7.00	$7.00	$7.00	$7.00	$35.00	$7.00
Non-Disc. "M"	$27.20	$25.48	$30.12	$30.77	$31.44	$32.13	$149.93	$29.99
Program Development/Scoping	$12.50	$14.58	$14.66	$15.23	$15.81	$16.01	$76.22	$15.24
MPI	$1.90	$1.30	$0.75	$0.75	$0.75	$0.75	$4.30	$0.86
Jurisdictional Transfers	$2.70	$0.00	$1.90	$8.20	$0.80	$0.80	$11.70	$2.34
State RR Xings	$0.90	$1.30	$0.90	$0.90	$0.90	$0.90	$4.90	$0.98
Carpool Parking Lot program	$0.00	$1.10	$1.10	$1.10	$1.10	$1.10	$5.50	$1.10
TOTAL OTHER	$133.14	$134.33	$139.88	$150.24	$138.18	$140.28	$703.81	$140.76
TOTAL NEW CAPITAL OUTLAY PROGRAM & MAINTENANCE PROG. + Prior Program Commitments (Crit.Caps.,+AC Reduct.)	$1,348.99	$1,498.09	$1,253.16	$1,244.87	$1,155.84	$1,124.82	$6,274.81	$1,254.96
TOTAL CAPITAL OUTLAY PROG. & MAINTENANCE PROG.	$1,348.99	$1,498.09	$1,253.16	$1,244.87	$1,155.84	$1,124.82	$6,274.81	$1,254.96
Subtract ROUTINE MAINTENANCE [4]	$234.00	$253.73	$261.08	$268.66	$276.45	$284.46	$1,344.38	$268.88
TOTAL CAPITAL OUTLAY WITHOUT ROUT. MAINTENANCE:	$1,114.99	$1,242.36	$992.08	$976.22	$879.40	$840.36	$4,930.43	$986.09

NOTE:

[1] FY2004 based on the FY04 announced/approved by the Sept., 2003 Commission meeting.

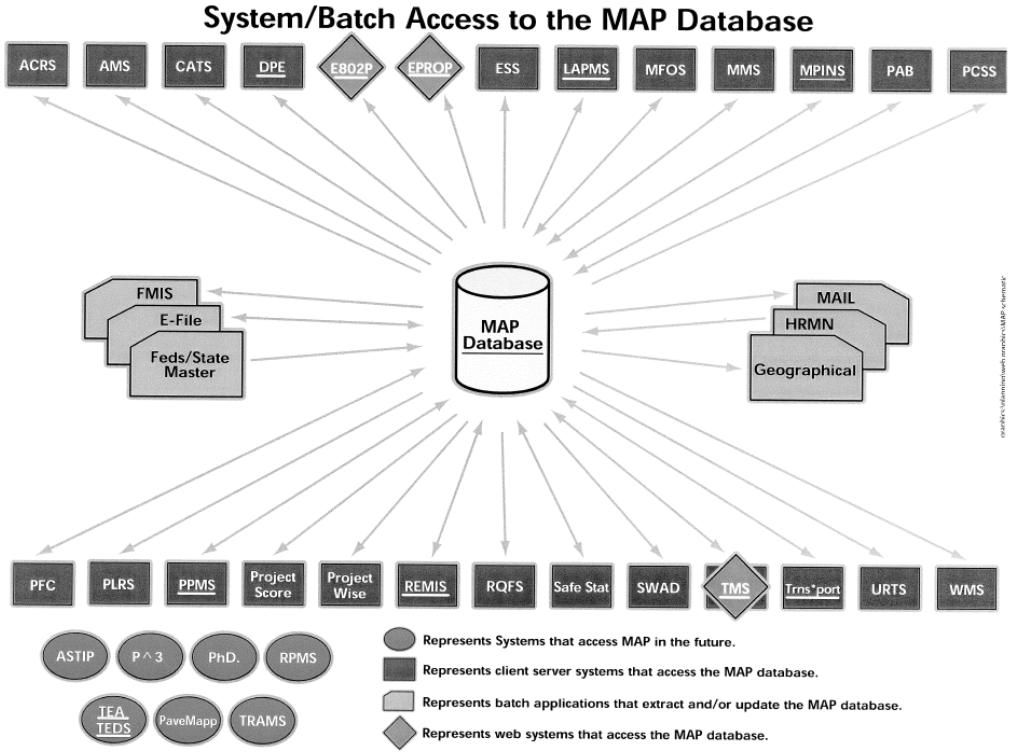
[2] FY2005 based on the FY05 announced/approved by the Sept. 2004 Commission meeting.

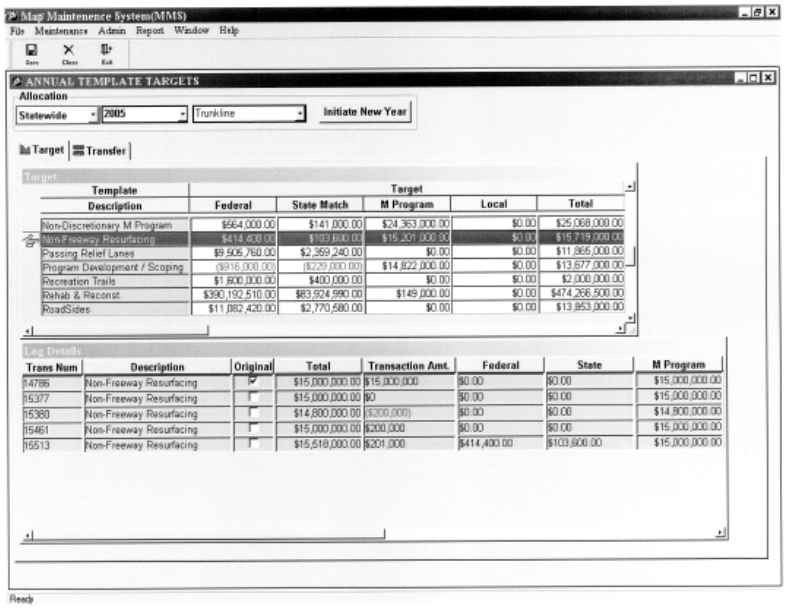
[3] FY2006 thru FY2009:

- RR: based on the 2009 Call constrained table as of [illegible]; Additional program $ and cumulative inflation are reflected in the amounts; and New Preserve First and advancement jobs are incorporated based on [illegible] analysis.
- PRL: based on the base target [illegible] jobs from [illegible] program submission detail report as of [illegible].
- [illegible]: based on [illegible] file on the server [illegible] printed on [illegible].
- CPM: based on the base target [illegible] + Additional Program + Cumulative Inflation + Preserve First funding ([illegible] for FY05, [illegible] for FY06, [illegible] for FY07) Preserve First funding for CPM is total of [illegible] for FY05 through FY07
- Bridge: based on the base target [illegible] (Preserve First funding, FY04 to FY07). Will consider applying inflation factor to future years (next 5 year plan, [illegible])
- Disc. Demo: Disc. and Demo are considered as funding sources and removed from this sheet. Assumed all the projects are programmed in one of the other template categories
- Other: [illegible] (Preserve First, FY04 to FY07) Enhancement: [illegible] of total Fed. Apport. [illegible] + 80/20 state match + [illegible] Preserve First FY04 to FY07) ITS: Estimated needs by [illegible] as of [illegible]; Noise Abatement: [illegible] (Preserve First) or [illegible] of [illegible] program Non-Disc M: Apply [illegible] inflation rate to future years + [illegible] for pump station/house per year in FY06 through FY09.

[4] Routine Maint. based on the estimates used in STP spreadsheet provided by [illegible] as of [illegible].

FIGURE A-2 (*continued*) **Michigan DOT's investment templates.**





(*continued*)

FIGURE A-3 Michigan DOT's MMS.

MMS

Map Maintenance System

MDOT
Michigan Department of Transportation

2005 ANNUAL TEMPLATE
(Millions)

Date 07-06-2005
Page 1 of 2

Template Programs	Estimates: Template Targets					Estimates: Amounts Programmed				Estimates: Remaining Template Targets				YTD Amounts Submitted				Available Template Targets			
	Fed	State M Prog	Local	Total		Fed	St + M	Local	Total	Fed	St + M	Local	Total	Fed	St + M	Local	Total	Fed	St + M	Local	Total
Undefined	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.18	$0.00	$0.18	$0.00	($0.10)	$0.00	($0.18)	($0.48)	($2.90)	$0.00	($2.90)	$0.48	$2.90	($0.00)	$2.90
Retab & Recondit	$380.19	$93.92	$0.15	$0.00	$474.27	$396.39	$208.17	$13.78	$618.34	($4.19)	($182.89)	($13.75)	($148.63)	$238.72	$124.32	$10.68	$373.68	$181.46	($43.23)	($10.68)	$103.57
Capital Preventive Maintenance	$87.87	$21.02	$0.00	$0.00	$108.89	$84.10	$43.02	$0.00	$127.07	$2.87	($21.71)	($0.00)	($18.79)	$52.86	$24.84	$0.05	$76.97	$34.90	($3.02)	($0.05)	$31.84
T & S - Overhead Sign Structures	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.01	($0.01)	$0.00	$0.00	($0.01)	$0.01	$0.00	($0.00)
T & S - Signs	$12.15	$2.57	$0.59	$0.00	$15.40	$19.86	$9.92	$0.00	$29.78	($7.72)	$2.15	$0.00	($5.58)	$4.82	$8.71	$0.01	$4.73	$6.12	$2.56	($0.01)	$10.66
T & S - Pavement Markings	$10.40	$2.60	$0.00	$0.00	$13.00	$10.82	$0.00	$0.00	$14.82	($4.42)	$2.60	$0.00	($1.82)	$13.60	$0.01	$0.00	$13.61	($3.20)	$2.59	$0.00	($0.61)
T & S - Signals	$9.76	$2.44	$0.00	$0.00	$12.20	$11.42	$0.00	$0.00	$12.12	($1.66)	$1.79	($0.05)	$0.08	$0.86	$0.72	$0.02	$0.58	$0.89	$1.74	($0.02)	$2.61
T & S - Impact Attenuators	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
T & S - Electrical	$4.95	$0.94	$0.00	$0.00	$5.89	$1.10	$0.08	$0.00	$1.18	$3.85	$0.85	$0.00	$3.90	($0.67)	($0.05)	$0.01	($0.70)	$4.82	$0.89	($0.01)	$5.70
T & S - Safety Programs	$14.93	$3.41	($0.21)	$0.00	$17.89	$15.72	$3.48	$0.01	$19.21	($1.19)	($0.23)	($0.01)	($1.33)	$9.34	$2.99	$0.14	$12.47	$5.19	$0.16	($0.14)	$5.21
Demonstration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	($11.19)	($0.03)	($0.00)	($11.22)	$11.19	$0.03	$0.00	$11.22
Capacity Improvement	$124.83	$29.49	$0.00	$0.00	$150.52	$145.51	$56.19	$4.83	$207.04	($21.48)	($27.21)	($4.83)	($53.53)	$51.77	$14.46	($0.91)	$28.72	$112.28	$15.03	$0.51	$127.80
New Roads (Capacity Expansion)	$3.99	$1.00	$0.00	$0.00	$4.99	$14.80	$3.00	$0.00	$17.80	($10.00)	($2.50)	$0.00	($12.81)	($5.35)	$28.31	($0.83)	$20.93	$9.33	($25.31)	$0.83	($15.16)
Discretionary	$1.79	$0.13	$0.00	$0.00	$0.84	$2.16	$2.99	$0.18	$5.29	($0.37)	($0.84)	($0.90)	($1.30)	$0.00	$0.52	$0.48	$0.90	$1.79	$1.84	($0.48)	$3.14
Weigh Stations	$0.83	$0.17	$0.00	$0.00	$1.00	$0.00	$0.05	$0.00	$0.05	$0.83	$0.12	$0.00	$0.96	$0.00	$0.00	$0.00	$0.00	$0.83	$0.17	$0.00	$1.00
Noise Abatement	$7.76	$1.94	$0.00	$0.00	$9.70	$1.44	$7.68	$1.01	$10.00	$6.32	($5.94)	($1.01)	($0.43)	$1.48	$1.08	$0.27	$2.10	$6.28	$0.85	($0.27)	$6.94
RestSites	$11.88	$2.77	$0.00	$0.00	$13.83	$9.39	$9.66	$0.51	$14.58	$2.89	($2.89)	($0.51)	($0.71)	$7.63	$2.18	$0.29	$10.00	$3.48	$0.58	($0.23)	$3.83
Federal RRXings	$4.40	$1.10	$0.00	$0.00	$5.50	$4.83	$3.04	$0.68	$8.57	($0.13)	$1.06	$0.00	$0.93	$1.68	$0.03	$0.00	$1.69	$2.74	$1.07	$0.00	$3.81
Intelligent Transportation Systems (ITS)	$9.26	$3.00	$0.00	$0.00	$9.25	$4.88	$2.28	$0.00	$6.66	$0.67	$0.72	$0.00	$1.48	($3.00)	($0.91)	$0.00	($3.91)	$8.25	$3.91	$0.00	$11.36
CMAQ	$17.38	$4.34	$0.00	$0.00	$21.70	$13.53	$1.41	$0.00	$14.93	$3.83	$2.93	$0.00	$6.77	$4.52	$0.71	$0.18	$5.41	$12.84	$3.63	($0.18)	$16.29
Enhancements	$17.38	$4.34	$0.00	$0.00	$21.70	$12.58	$2.14	$3.94	$18.18	$0.28	$2.20	($3.94)	$3.54	$7.38	$1.05	$2.13	$11.18	$9.66	$2.78	($2.13)	$10.52
Strategic Systems Development	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	($0.00)	($0.00)	$0.00	($0.00)	$0.00	$0.00	$0.00	$0.00
Training	$2.70	$0.30	$0.00	$0.00	$3.00	$2.85	$1.20	$0.00	$4.15	($0.15)	($0.90)	$0.00	($1.15)	$1.58	$0.68	$0.00	$2.10	$1.28	($0.38)	$0.00	$0.90
Non-Discretionary M Program	$0.96	$0.14	$24.06	$0.00	$25.07	$0.26	$22.97	$0.00	$23.24	$0.70	$1.83	$0.00	$1.83	$0.08	$14.94	$0.02	$15.06	$0.18	$8.57	($0.02)	$8.11
Passing Relief Lanes	$9.61	$2.39	$0.00	$0.00	$11.87	$4.66	$14.30	$0.00	$18.28	$4.62	($11.94)	$0.00	($7.42)	($2.16)	$8.22	$0.19	$6.25	$6.56	($5.95)	($0.19)	$0.62
SPR	$0.00	$0.00	$0.00	$0.00	$0.00	$10.56	$4.10	$0.00	$20.68	($16.56)	($4.10)	$0.00	($20.68)	$17.19	$8.00	$0.00	$17.19	($17.19)	$8.00	$0.00	($17.19)
Bridge - Replacement and Rehabilitation	$147.74	$29.40	$0.00	$0.00	$177.24	$183.33	$44.11	$4.27	$231.71	($35.59)	($14.71)	($4.27)	($54.47)	$113.91	$28.96	$1.93	$144.64	$33.84	$0.58	($1.93)	$32.60
Economic Development	($0.64)	($0.16)	$2.13	$0.00	$1.30	$0.80	$3.01	$0.08	$3.18	($0.64)	($1.57)	($0.85)	($1.80)	($0.80)	$0.08	$0.00	($0.80)	($0.64)	$1.94	$0.80	$1.30
State Road Preservation (SRP)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Supplemental Fiscal Year M Preserve	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Wetland Pre-Mitigation	$3.91	$0.84	$0.00	$0.00	$4.79	$3.79	$1.82	$0.00	$5.61	$0.83	($0.98)	$0.00	($0.81)	$3.22	$1.54	$0.00	$4.76	$0.58	($0.80)	$0.00	($0.01)
Aeronautics	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Transit	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Jurisdictional Transfer	$3.67	$0.87	$0.00	$0.00	$4.54	$2.81	$1.98	$0.00	$4.79	$1.06	($1.01)	$0.00	$0.06	$0.00	$0.14	($0.00)	$0.14	$3.67	$0.23	$0.00	$4.10
Michigan Institutional Roads	$0.00	$0.00	$1.30	$0.00	$1.30	$0.00	$0.87	$0.00	$0.93	$0.00	$0.43	($0.00)	$0.43	$0.00	$0.02	$0.00	$0.01	$0.00	$0.47	($0.00)	$0.39
Advance R.O.W. Acquisition	$3.08	$0.00	$7.00	$0.00	$7.08	$0.00	$0.83	$0.00	$0.83	$0.00	$6.17	$0.00	$6.17	$0.00	$0.31	$0.00	$0.31	$0.00	$5.69	$0.00	$5.69
Recreation Trails	$1.60	$0.40	$0.00	$0.00	$2.00	$0.00	$0.00	$0.00	$0.00	$1.60	$0.40	$0.00	$2.00	$0.00	$0.00	$0.00	$0.00	$1.60	$0.40	$0.00	$2.00
Program Development / Staging	($0.82)	($0.20)	$14.82	$0.00	$13.80	$0.00	$11.80	$0.00	$11.80	($0.82)	$2.70	$0.00	$1.78	$0.00	$7.17	($0.01)	$7.17	($0.82)	$7.42	$0.01	$6.61
State RRXings	($0.52)	($0.01)	$1.30	$0.00	$1.26	$0.08	$0.70	$0.00	$0.78	($0.61)	$0.59	$0.00	$0.00	$0.00	$0.47	$0.00	$0.47	($0.52)	$0.82	$0.00	$0.78
Non-Freeway Resurfacing	$0.41	$0.10	$15.20	$0.00	$15.72	$0.00	$15.80	$0.00	$15.80	$0.41	($1.55)	$0.00	($1.13)	$0.00	$0.00	$0.00	$0.00	$0.41	$15.80	$0.00	$15.72
Carpool Parking Lot Program	($0.02)	($0.01)	$1.10	$0.00	$1.07	$0.00	$1.06	$0.00	$1.06	($0.02)	$0.04	$0.00	$0.02	$0.00	$0.14	$0.00	$0.14	($0.02)	$0.90	$0.00	$0.90
Bridge - Preventive Maintenance	$9.30	$2.07	$0.00	$0.00	$10.37	$10.13	$4.63	$0.00	$14.74	($1.80)	($2.55)	$0.00	($4.37)	$0.00	$0.00	$0.00	$0.00	$9.30	$2.07	$0.00	$10.37
Bridge - Special Needs	$7.66	$1.68	$0.00	$0.00	$9.40	$9.50	$7.67	$0.83	$18.22	$2.03	($5.79)	($0.00)	($3.77)	$0.47	$0.22	$0.00	$0.68	$7.20	$1.47	$0.00	$8.77

(*continued*)

FIGURE A-3 (*continued*) **Michigan DOT's MMS.**

MMS

Map Maintenance System

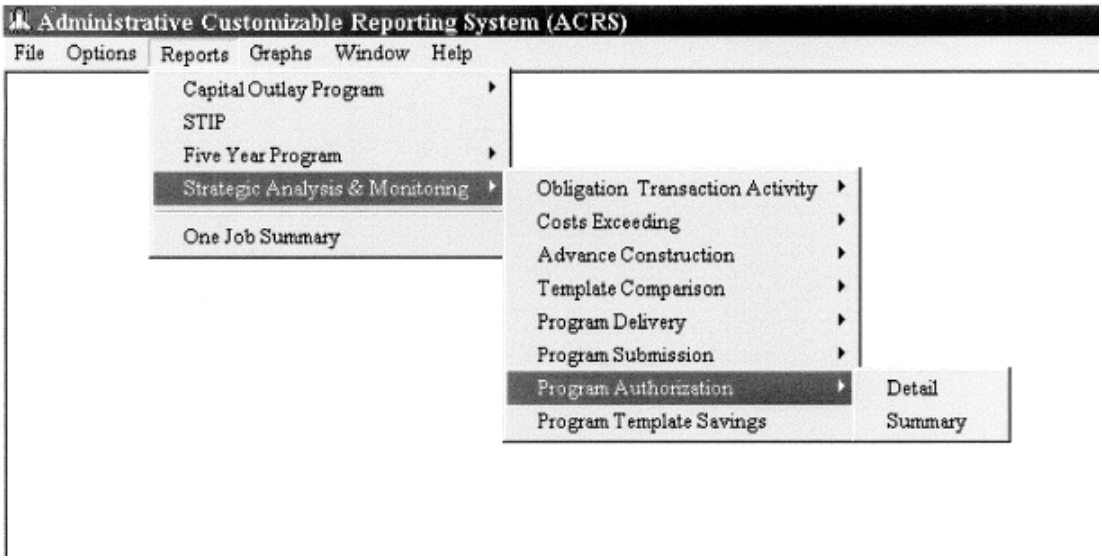
Template Transfers
Summary of FROM / TO

Printed on: 07/08/2005 13:24:54

Transfer Year	Template Category	FROM	TO	NET
2005				
	Bridge - Replacement and Reha	$6,709,400.00	$8,740,400.00	$2,031,000.00
	Bridge - Special Needs	$0.00	$450,000.00	$450,000.00
	Capacity Improvement	$38,231,000.00	$10,500,000.00	($27,731,000.00)
	Capital Preventive Maintenance	$650,000.00	$798,000.00	$148,000.00
	Carpool Parking Lot Program	$28,000.00	$0.00	($28,000.00)
	Economic Development	$800,000.00	$0.00	($800,000.00)
	New Roads (Capacity Expansio	$1,884,000.00	$0.00	($1,884,000.00)
	Non-Discretionary M Program	$1,465,000.00	$1,145,000.00	($320,000.00)
	Non-Freeway Resurfacing	$200,000.00	$200,000.00	$0.00
	Passing Relief Lanes	$3,700,000.00	$965,000.00	($2,735,000.00)
	Program Development / Scopin	$1,145,000.00	$0.00	($1,145,000.00)
	Rehab & Reconst.	$22,165,100.00	$52,937,600.00	$30,772,500.00
	RoadSides	$1,020,000.00	$2,340,000.00	$1,320,000.00
	State RRXings	$40,000.00	$0.00	($40,000.00)
	T & S - Guardrail	$0.00	$389,000.00	$389,000.00
	T & S - Safety Programs	$4,579,000.00	$2,509,100.00	($2,069,900.00)
	T & S - Signals	$39,600.00	$0.00	($39,600.00)
	T & S - Signs	$504,400.00	$1,186,400.00	$682,000.00
	Total Transfers 2005	$83,160,500.00	$82,160,500.00	($1,000,000.00)

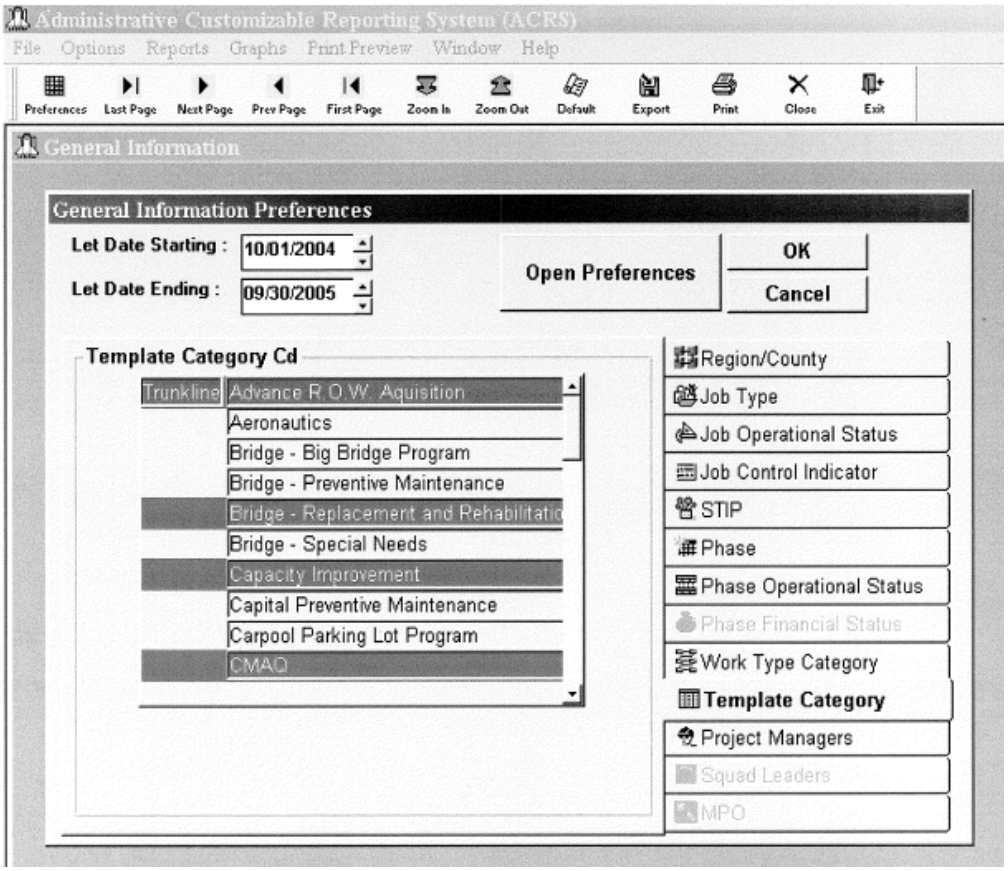
Page 1 of 1
file:c:\data\InfoMaker\library\transfer.pbl\tmpl_tran_total_category_from

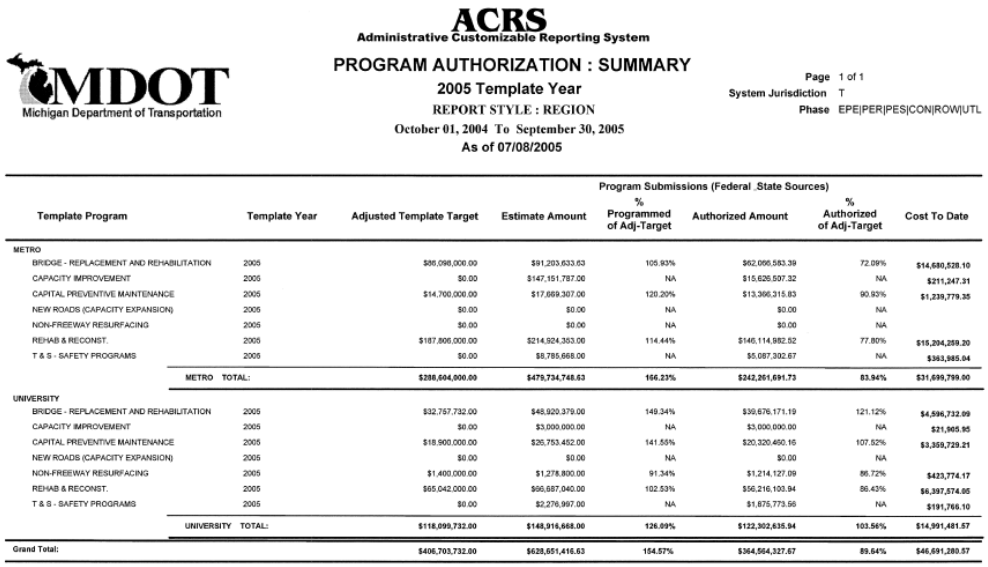
FIGURE A-3 (*continued*) **Michigan DOT's MMS.**



(*continued*)

FIGURE A-4 Michigan DOT's ACRS.





ACRS
Administrative Customizable Reporting System

MDOT Michigan Department of Transportation

PROGRAM AUTHORIZATION : SUMMARY
2005 Template Year
REPORT STYLE : REGION
October 01, 2004 To September 30, 2005
As of 07/08/2005

Page 1 of 1
System Jurisdiction T
Phase EPE|PER|PES|CON|ROW|UTL

Template Program	Template Year	Adjusted Template Target	Program Submissions (Federal ,State Sources) Estimate Amount	% Programmed of Adj-Target	Authorized Amount	% Authorized of Adj-Target	Cost To Date
METRO							
BRIDGE - REPLACEMENT AND REHABILITATION	2005	$86,098,000.00	$91,203,633.63	105.93%	$62,066,583.39	72.09%	$14,680,528.10
CAPACITY IMPROVEMENT	2005	$0.00	$147,151,787.00	NA	$15,626,507.32	NA	$211,247.31
CAPITAL PREVENTIVE MAINTENANCE	2005	$14,700,000.00	$17,669,307.00	120.20%	$13,366,315.83	90.93%	$1,239,779.35
NEW ROADS (CAPACITY EXPANSION)	2005	$0.00	$0.00	NA	$0.00	NA	
NON-FREEWAY RESURFACING	2005	$0.00	$0.00	NA	$0.00	NA	
REHAB & RECONST.	2005	$187,806,000.00	$214,924,353.00	114.44%	$146,114,982.52	77.80%	$15,204,259.20
T & S - SAFETY PROGRAMS	2005	$0.00	$8,785,668.00	NA	$5,087,302.67	NA	$363,985.04
METRO TOTAL:		$288,604,000.00	$479,734,748.63	166.23%	$242,261,691.73	83.94%	$31,699,799.00
UNIVERSITY							
BRIDGE - REPLACEMENT AND REHABILITATION	2005	$32,757,732.00	$48,920,379.00	149.34%	$39,676,171.19	121.12%	$4,596,732.09
CAPACITY IMPROVEMENT	2005	$0.00	$3,000,000.00	NA	$3,000,000.00	NA	$21,905.95
CAPITAL PREVENTIVE MAINTENANCE	2005	$18,900,000.00	$26,753,452.00	141.55%	$20,320,450.16	107.52%	$3,359,729.21
NEW ROADS (CAPACITY EXPANSION)	2005	$0.00	$0.00	NA	$0.00	NA	
NON-FREEWAY RESURFACING	2005	$1,400,000.00	$1,278,800.00	91.34%	$1,214,127.09	86.72%	$423,774.17
REHAB & RECONST.	2005	$65,042,000.00	$66,687,040.00	102.53%	$56,216,100.94	86.43%	$6,397,574.05
T & S - SAFETY PROGRAMS	2005	$0.00	$2,276,997.00	NA	$1,875,773.56	NA	$191,766.10
UNIVERSITY TOTAL:		$118,099,732.00	$148,916,668.00	126.09%	$122,302,635.94	103.56%	$14,991,481.57
Grand Total:		$406,703,732.00	$628,651,416.63	154.57%	$364,564,327.67	89.64%	$46,691,280.57

(*continued*)

FIGURE A-4 (*continued*) **Michigan DOT's ACRS.**

ACRS
Administrative Customizable Reporting System

PROGRAM SUBMISSION : DETAIL

October 01, 2004 To September 30, 2005

REPORT STYLE : COUNTY

Date 07-08-2005
Page 1 of 1
System Jurisdiction T
Phase CON

Job #	CS	Route \ Location \ Work Description	Construction Let Date	Finance Code	Miles	Phase	Template Year Estimated Start	Template Year Actual Start	Program Submissions (Federal/State Only) Est. Amount	Program Submissions (Federal/State Only) Auth. Amount	Estimated Program Amount (Unsubmitted) (Federal/State Only)
Template Year:		**2005**									
Template Program:		**Rehab & Reconst.**									
County Name:		**MACOMB**									
80009	50051	I-696 SD \ MILTON TO M-97 \ BIT OVLY	04/12/2005	MG	4.370	CON	04/01/2005	04/12/2005	$5,266,629.00	$5,617,667.23	$0.00
									$5,266,629.00	**$5,617,667.23**	$0.00
County Name:		**OAKLAND**									
50290	63174	I-75 \ 8 MILE ROAD TO 12 MILE ROAD \ MILL AND RESURFACE	06/03/2005	IM	4.340	CON	06/03/2005	06/03/2005	$16,298,978.00	$10,169,312.92	$0.00
50291	63052	US-24 \ ORCHARD LAKE TO ELIZABETH LAKE \ MAJOR REHABILITATION	07/08/2005	NH	1.822	CON	07/08/2005		$12,856,980.00	$12,726,322.67	$0.00
83919	63081	M-10 \ FOR JN 45715 \ X-OVERS & MOT FOR JN45715	08/05/2005	NH	0.688	CON	08/05/2005		$2,300,000.00	$1,835,250.29	$0.00
									$31,455,958.00	**$24,730,885.88**	$0.00
County Name:		**WAYNE**									
45689	82061	US-12 \ HOWE TO HENRY RUFF \ PVMNT PATCH	09/09/2005	NH	1.775	CON	09/09/2005		$4,476,000.00	$0.00	$4,476,000.00
45690	82062	US-12 \ CASS TO GRISWOLD \ TURN BACK	02/03/2005	M	0.230	CON	10/01/2003	05/09/2005	$1,321,000.00	$1,321,000.00	$0.00
45691	82102	M-14 \ HAGGERTY ROAD TO SHELDON ROAD \ CONCRETE PAVEMENT REPAIR	09/09/2005	NH	1.832	CON	09/09/2005		$1,208,000.00	$0.00	$1,208,000.00
45709	82081	M-153 \ ARCOLA TO VERNOIN \ PATCH AND OVERLAY	11/05/2004	NH	1.850	CON	11/05/2004	11/05/2004	$4,106,142.00	$3,304,720.70	$0.00
48608	82124	I-96 \ WARREN AVENUE TO ROOSEVELT \ RECONSTRUCT	01/07/2005	IM	0.944	CON	01/07/2005	01/07/2005	$14,806,587.00	$15,134,156.09	$0.00
48609	82052	US-24 \ PENNSYLVANIA TO I-75 CONNECTOR \ BIT OLAY	11/05/2004	NH	0.620	CON	11/05/2004	11/05/2004	$1,553,927.00	$1,267,771.15	$0.00
52803	82123	I-96 \ M-39 TO GRAND RIVER \ RCN	02/04/2005	IM	2.870	CON	02/04/2005	02/04/2005	$46,758,125.00	$40,541,017.31	$0.00
59069	82063	US-24 \ JOY TO PLYMOUTH \ NB M&R, SB PTCH&OLAY	11/05/2004	NH	0.920	CON	11/05/2004	11/05/2004	$2,544,000.00	$1,675,740.24	$0.00
75185	82072	M-3 \ RANDOLPH TO GTW RR \ MILL & RESURFACE	03/04/2005	ST	1.227	CON	03/04/2005	03/04/2005	$2,443,282.00	$2,432,491.78	$0.00
75186	82211	M-85 \ GODDARD TO SCHAEFER \ MILL AND RESURFACE	02/04/2005	ANH	4.097	CON	02/04/2005	02/04/2005	$11,809,425.00	$6,930,560.98	$0.00
78423	82124	I-96 \ I-75 TO WARREN AVENUE \ RECONSTRUCT	08/05/2005	IM	1.040	CON	08/05/2005		$16,842,800.00	$0.00	$16,842,800.00
80013	82073	M-85 \ MILLER TO CLARK \ MILL AND RESURFACE	09/09/2005	NH	3.031	CON	09/09/2005		$2,247,819.00	$0.00	$2,247,819.00
80694	82123	I-96 \ SCHAEFER TO ROOSEVELT \ MILL AND RESURFACE	02/04/2005	AIM	4.987	CON	02/04/2005	02/04/2005	$23,132,188.00	$21,883,356.67	$0.00
81377	82171	M-97 \ GRATIOT AVENUE TO SOUTH OF GLENFIELD \ MILL AND RESURFACE	05/06/2005	ST	0.092	CON	05/06/2005	05/06/2005	$257,365.00	$122,852.47	$0.00
83062	82062	US-12 \ AT ROSA PARKS \ MILL AND RESURFACE	08/05/2005	NH	0.107	CON	08/05/2005		$141,711.00	$114,261.74	$0.00
									$133,647,371.00	**$94,727,929.13**	$24,774,619.00
					36.842				$170,369,958.00	**$125,076,482.24**	$24,774,619.00
Grand Total :					36.842				$170,369,958.00	**$125,076,482.24**	$24,774,619.00

FIGURE A-4 (*continued*) **Michigan DOT's ACRS.**

WYOMING DEPARTMENT OF TRANSPORTATION	OPERATING POLICY
ISSUED: October 4, 2002	POLICY NUMBER: 17-8
	AUTHORITY: Director

SUBJECT: Public Involvement Policy

I. Purpose

The goal of the Wyoming Department of Transportation (WYDOT) is to involve the public in addressing transportation issues proactively. The Department will communicate the agency's mission and goals to as wide an audience as possible and consider feedback received from outside organizations and the general public.

II. Specific Goals

WYDOT aims to achieve the following:

A. Incorporate public input into transportation decision-making by providing for open and continuous communication designed to inform the public of planning, program functions, and project activities.

B. Implement a public involvement plan to identify and use Department resources to inform the public of WYDOT's activities and receive public input. The plan will establish levels (depending on the nature and complexity of the activity) for communicating with local government jurisdictions, external state and federal agencies, businesses, tribal governments, interest groups, and the public at large.

C. Consult with local governments in identifying transportation needs and selecting viable solutions.

D. Extend WYDOT's outreach efforts by consulting with and soliciting input from individuals and groups with interests related to transportation. These outreach activities will include regularly conducted surveys.

E. Provide opportunities for individuals and groups to participate in developing the Statewide Long Range Plan and the Statewide Transportation Improvement Plan (STIP).

F. Communicate the details of programs, activities, project designs, and construction.

G. Respond in a timely and open manner to concerns expressed about Department activities and conduct continuing efforts to educate the public about transportation programs and issues.

(*continued*)

FIGURE A-5 WYDOT's public involvement operating policy.

2. Personal contacts with adjacent landowners.

3. Contacts with local officials, interest groups, and other organizations.

4. A scoping meeting to present basic concepts or information and to seek input.

5. A public meeting or hearing explaining decisions.

6. Distribution of the environmental document and a news release about the public meeting or hearing.

7. A news release announcing the decision.

8. Contacts with adjacent landowners explaining decisions.

9. Using applicable media or methods during construction or implementation to disseminate information.

D. Level D projects will usually include activities such as environmental impact statements (EIS's), major realignment, new highway corridor projects, and major urban projects. Level D public involvement will typically require the following:

1. A notice of intent and a news release explaining the project including a Department point of contact. Contacts with newspapers serving the area will be scheduled to develop a story and graphics that explain and illustrate the proposal. Other applicable media contacts will also be used.

2. Establishing an advisory committee of diverse stakeholders for the project.

3. Possibly establishing an interdisciplinary (ID) team of technical expertise for the project.

4. Personal contacts with adjacent landowners.

5. Contacts with local government officials, interest groups, and civic organizations.

6. Scoping meetings, to include:

- A public meeting to determine the scope of the issues.
- A public meeting to identify possible alternatives.
- Public meetings on findings and significant issues.

(*continued*)

FIGURE A-5 (*continued*) **WYDOT's public involvement operating policy.**

7. Contacts with landowners, government officials, and interest groups during EIS preparation.

8. A public hearing.

9. Distribution of the environmental document and a news release about the public hearing.

10. Contacts with landowners, government officials, and interest groups explaining the decision.

11. Announcing the decision or selected alternative via a news release and other media contacts.

12. Using applicable media or methods during construction or implementation to disseminate information.

(*continued*)

FIGURE A-5 (*continued*) **WYDOT's public involvement operating policy.**

H. Review and update the public involvement plan and process as needed. WYDOT will also continuously evaluate the effectiveness of public outreach activities and use the results to improve the program.

I. Foster internal communication and training to promote understanding and implementation of the public involvement process.

III. Criteria for Establishing Public Involvement Levels for Transportation Projects

Using the following guidelines, program managers and district engineers will determine the appropriate level of public involvement for activities as soon as it is practical to do so. This level is subject to change as a project or activity evolves.

IV. Project Levels and Public Involvement Actions

A. Level A projects will usually include activities such as maintenance projects, contract maintenance projects, and projects with programmatic categorical exclusions. Level A public involvement will typically require the following:

1. A news release explaining the project including a Department point of contact.

B. Level B projects will usually include activities such as minor urban projects, projects with categorical exclusions, and some reconstruction projects. Level B public involvement will typically require the following:

1. A news release explaining the project including a Department point of contact. Alternatively or additionally, contact with newspapers serving the area to develop a story and graphics that explain and illustrate the proposal may be used. Other applicable media, such as radio and television, may be contacted as well.

2. Contacts with local government officials, interest groups, and other organizations.

3. Contacts with affected landowners explaining design and activities.

4. Public notification of construction-related schedules, detours, and so forth.

C. Level C projects will usually include activities such as environmental assessments, corridor studies or improvements, and minor realignment projects. Level C public involvement will typically require the following:

1. A notice of intent and a news release explaining the project including a Department point of contact. Contact will be made with newspapers serving the area to develop a story and graphics that explain and illustrate the proposal. Other applicable media contacts will also be used.

FIGURE A-5 (*continued*) **WYDOT's public involvement operating policy.**

APPENDIX B

List of Participants

Roy Cornelius
New Mexico Department of Transportation

Daryl Greer
Kentucky Department of Transportation

Charlie Howard
Puget Sound Regional Council

Denise Jackson
Michigan Department of Transportation

Eric Kalivoda
Louisiana Department of Transportation

Tim McDowell
Wyoming Department of Transportation

Alpesh Patel
North Carolina Department of Transportation

John Pein
Arizona Department of Transportation

Gloria Shepard
Federal Highway Administration

Brian Smith
California Department of Transportation

Theresa Smith
Washington Department of Transportation

Mary Lynn Tischer
Virginia—Office of the Governor

Rhonda Young
University of Wyoming

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

The **National Academy of Sciences** is a private, nonprofit, self-perpetuating society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare. On the authority of the charter granted to it by the Congress in 1863, the Academy has a mandate that requires it to advise the federal government on scientific and technical matters. Dr. Ralph J. Cicerone is president of the National Academy of Sciences.

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The **National Research Council** was organized by the National Academy of Sciences in 1916 to associate the broad community of science and technology with the Academy's purposes of furthering knowledge and advising the federal government. Functioning in accordance with general policies determined by the Academy, the Council has become the principal operating agency of both the National Academy of Sciences and the National Academy of Engineering in providing services to the government, the public, and the scientific and engineering communities. The Council is administered jointly by both the Academies and the Institute of Medicine. Dr. Ralph J. Cicerone and Dr. William A. Wulf are chair and vice chair, respectively, of the National Research Council.

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