



TPCB Peer Program

Transportation Planning
Capacity Building Program

Host: Colorado Department of Transportation
Denver Regional Council of Governments
Denver Regional Transit District

Peers: Arkansas State Highway and Transportation Department
Michigan Department of Transportation
Pennsylvania Department of Transportation
Delaware Valley Regional Planning Commission
Grand Valley Metropolitan Council
Metroplan- Little Rock
Pike's Peak Council of Governments
The Rapid, Grand Rapids
Federal Highway Administration
Federal Transit Administration
U.S. DOT Volpe Center

– TPCB Peer Roundtable Report –

“Peer Roundtable on Fiscal Constraint”

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Exchange Host Agency: Colorado Department of Transportation

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U.S. Department of Transportation

Federal Highway Administration/Federal Transit Administration

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I. Executive Summary

This report summarizes proceedings from a two-day Peer Roundtable on Fiscal Constraint. This peer event was supported by the [Transportation Planning Capacity Building \(TPCB\)](#) Program, which is jointly sponsored by Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA).

This peer exchange brought together State Departments of Transportation (SDOT), Metropolitan Planning Organizations, and transit agencies to discuss key issues of interest concerning fiscal constraint within the transportation planning process. The peer exchange focused on how each State DOT coordinates with its partner transportation agencies to demonstrate fiscal constraint in the development and revision of the Metropolitan Transportation Plan (MTP), metropolitan Transportation Improvement Program (TIP), and the State Transportation Improvement Program (STIP).

Key themes that the participants addressed include:

The Cooperative Process among State DOTs, MPOs, and Transit Agencies:

- Several peers noted that by explicitly linking MPO-developed TIPs and State DOT-developed STIPs, the fiscal constraint requirement has strengthened the relationship between MPOs and State DOTs. In order to satisfy the fiscal constraint requirement, the various transportation agencies must coordinate their plans to show the same projected revenues, project costs, and year of expenditures.
- There are many stages of plan and program development at which coordination between State and regional agencies is required. This includes projected funding, allocation of resources within the State, estimation of project costs and estimated timelines for constructing projects. The peers noted a range of methods to reach consensus.
- Proactive coordination and collaboration between State, regional, and local agencies involved in the transportation planning process can help in developing projections and work to reduce disputes and delay related to negotiating the projections. The working relationships that develop between partner agencies through committee work also may help in effectively managing amendments and modifications to adopted plans that arise.
- The process for making changes to an adopted TIP or STIP can be time consuming and impose an accounting burden on the staff. The cooperative process should establish thresholds for those changes that can be made through administrative updates and those that require amendments.
- The use of an electronic amendment process can streamline the process and help ensure consistency between the TIP and the STIP.

Project Prioritization and Plan Development:

- Peers expressed concern that fiscal constraint may have the unintended consequence of upsetting this relationship between the MTP and TIP in two ways. One, fiscally constraining the MTP may reduce the MPO's focus on visioning and goal-setting. Second, the backlog of projects from previous metropolitan plans compete for funding within the TIP, sometimes restricting the ability to change direction as a region's vision and goals change.
- Many States and MPOs are facing escalating operating and maintenance costs related to roads, bridges and transit infrastructure reaching the end of their useful lives. These transportation assets will require significant investments in operations and maintenance to retain safe and efficient operations. However, peers discussed the lack of consensus around how operations and maintenance are characterized and funded.

- Estimating the need for operations and maintenance is challenging. Some States have advanced asset management systems that can be used to show the level of funding needed to maintain transportation systems at various condition standards.
- Peers expect future Federal transportation legislation to emphasize performance measurement including requirements for demonstrating a state of good repair for the system. This requirement could raise the incentives for prioritizing operations and maintenance activities.
- Demonstrating fiscal constraint requires a significant amount of financial planning work. Peers discussed the challenges associated with developing staff capacity in financial planning, a skill that most transportation planners have not received training in.

Estimating Revenues and Costs:

- Historically costs and revenues had followed fairly predictable linear growth patterns; however, since the mid-2000s both costs and revenues have proven to be quite volatile, making the task of forecasting future revenues and costs more difficult, which makes it challenging to demonstrate fiscal constraint.
- Peers reported growing uncertainty in estimating future revenues. Historically, Federal formula revenue has been the primary revenue source for capital projects. In recent years, Federal funding comprises a smaller percentage of total revenues as other revenue sources, including toll revenue, State bonds, local funding, and private investment are becoming more significant. This makes projecting future revenues more challenging.
- Discretionary revenues include grant funds that States may apply for in addition to formula funds. Discretionary funding levels can be very hard to predict. FHWA requires only that the State DOT and its partners reach agreement on a level of funding that reflects past experience.
- Agencies can struggle with determining how often to revise cost estimates. For example, Colorado DOT updates the STIP every week. DVRPC processes amendments and modifications to the TIP on a monthly basis, and PennDOT reviews project obligations every quarter to identify changes to schedule and cost.
- Since December 2007, FHWA and the FTA have required cost and revenue estimates for the STIP, MTP, and TIP to use an inflation rate(s) to reflect year of expenditure dollars based on reasonable financial principles and information, developed cooperatively by the State DOT, MPOs, and public transportation operators.
- Peers noted that construction inflation and project schedules can be reasonably estimated for the four-year TIP time period in order to present the program in YOY dollars, but that estimating cost, inflation, and schedule for the outer years for the MTP can be problematic.
- Estimating cost for major projects, particularly those in urban areas, is particularly challenging. RTD-Denver employed several techniques to help in estimating its FasTraks project. This included third party review, an annual program evaluation, convening a construction inflation workshop, and bottom-up cost estimates at the 30 percent design phase.
- Many States are experimenting with public-private-partnerships (PPPs) and other non-traditional project financing. Both State DOTs and MPOs can struggle with the amount of financial analysis required from private partnerships about costs and revenues of private projects and how they are included within a metropolitan transportation plan.

II. Introduction

This report highlights successful practices for satisfying the fiscal constraint requirement at a State Department of Transportation (DOT), Metropolitan Planning Organization (MPO), and/or transit agency that were discussed during a two-day peer exchange. The exchange was sponsored by the [Transportation Planning Capacity Building](#) (TPCB) Program, which is jointly funded by the [Federal Highway Administration](#) (FHWA) and the [Federal Transit Administration](#) (FTA).

Processes for meeting the fiscal constraint requirement vary in each State and region. Each State's own legislation, policies, regulations, organizational structures and politics might influence the financial element of transportation plans and programs. Nevertheless, many successful practices and lessons learned related to fiscal constraint may be transferable across States.

The TPCB Peer Program advances the state of the practice in multimodal transportation planning nationwide by organizing, facilitating, and documenting peer events to share noteworthy practices among DOTs, Metropolitan Planning Organizations (MPOs), transit agencies, and local and Tribal transportation planning agencies. During peer events, transportation planning staff interact with one another to share information, accomplishments, and lessons learned from the field and help one another overcome shared transportation planning challenges.

III. About the Peer Exchange and Background on the Peer Event

The Colorado Department of Transportation (CDOT), Denver Regional Council of Governments (DRCOG), and Denver Regional Transit District (RTD) jointly hosted this two-day peer exchange held at RTD's offices in Denver, Colorado. This peer exchange provided representatives of State DOTs, MPOs, and transit agencies in Colorado, Arkansas, Pennsylvania and Michigan an opportunity to share information and experiences concerning the application of financial planning practices and fiscal constraint requirements in statewide and metropolitan planning processes. The peer exchange focused on how each State DOT coordinates with its partner transportation agencies to demonstrate fiscal constraint in the development and revision of the Metropolitan Transportation Plan (MTP), metropolitan Transportation Improvement Program (TIP), and State Transportation Improvement Program (STIP). The peer exchange also included staff from the FHWA Division Offices who work with the participating State DOTs, FHWA Headquarters staff, FHWA Resource Center staff, as well as staff from the Volpe Center to provide technical and logistical support.

With the passage of ISTEA in 1991, the requirement to balance current and estimated future transportation project costs with the anticipated revenues for those projects, in order to demonstrate "fiscal constraint", was introduced to the Federal transportation planning process. Subsequently, provisions in TEA-21 and SAFETEA-LU and updated planning regulations (23 CFR 450) have reemphasized and refined the need for State DOTs and their partner organizations to address fiscal constraint in three major planning products: Metropolitan Transportation Plans (MTPs), Transportation Improvement Programs (TIPs), and STIPs. The fiscal constraint requirements are intended to ensure that transportation plans and programs can be delivered with reasonably anticipated revenue levels.

Significant strides have been made over the past two decades in turning transportation planning products from "wish lists" into plans and programs that advance and implement desired transportation improvements and strategies. Many challenges remain, however, to enhance the financial planning process and make the demonstration of fiscal constraint a more meaningful exercise for the State DOTs, their planning partners, policy-makers and the public. Recent fluctuations in the economy have affected inflation, the pricing of raw materials and fuel, and transportation revenues, making financial planning even more challenging. Several peer exchanges, a national scan, and a white paper supported by the American Association of State

Highway and Transportation Officials (AASHTO) demonstrate the importance of this subject to the transportation community (see Appendix C for references to other fiscal constraint documentation).

Fiscal constraint means that the metropolitan transportation plan, TIP, and STIP includes sufficient financial information for demonstrating that projects in the metropolitan transportation plan, TIP, and STIP can be implemented using committed, available, or reasonably available revenue sources, with reasonable assurance that the federally supported transportation system is being adequately operated and maintained. For the TIP and the STIP, financial constraint/fiscal constraint applies to each program year. Additionally, projects in air quality nonattainment and maintenance areas can be included in the first 2 years of the TIP and STIP only if funds are “available” or “committed.” [23 CFR 450.104]

IV. The Cooperative Process Among State DOTs, MPOs, and Transit Agencies: Coordinating MTPs, TIPs, and STIPs

The FHWA and FTA Transportation Planning Rule requires State DOTs to work in cooperation with MPOs and in consultation with non-metropolitan local officials to develop the four-year program of transportation expenditures involving Federal action that can be delivered with reasonably anticipated revenue levels. The four-year program defined in the STIP must be consistent with regional TIPs and MTPs. The STIP must be updated at a minimum every four years; however, STIPs and TIPs must also be revised and amended on an ongoing basis as revenues, project costs, and schedules change. [See 23 CFR 450.216(a),(b),(l), 23 CFR 450.322(f)(10)(iv), and 23 CFR 450.324(h), provided in Appendix A].

To develop the required plans and achieve consistency between them, State DOTs, MPOs, RPOs, and transit agencies must coordinate their work closely. This section of the report describes some key benefits, challenges, and strategies related to managing the coordination of multiple agencies, processes and planning documents that were discussed at the workshop. The first subsection notes that the required coordination efforts are a key benefit of fiscal constraint. The second subsection describes alternative strategies that the peers use to manage the cooperative process. The final subsection describes the cooperative process related to managing amendments and modifications to adopted plans on an ongoing basis.

A. Fiscal constraint requires DOTs, MPOs, and transit agencies to work together

One participant noted that by explicitly linking MPO-developed TIPs and DOT-developed STIPs, the fiscal constraint requirement has strengthened the relationship between MPOs and State DOTs. In order to satisfy the fiscal constraint requirement DOTs, MPOs, RPOs, and transit agencies must coordinate their plans to show the same projected revenues, project costs, and year of expenditures for the four-year programs. Prior to the introduction of the fiscal constraint requirement in 1991, it was not uncommon for the sum of MPO and RPO TIPs to exceed funding available to the State.

The level of collaboration and cooperation can vary among the participant States. Some use a top-down model led by the State DOT, while others use more collaborative models. The next subsections provide additional detail on the cooperative processes.

B. Managing Uncertainty

Overall, a sense that the future will be different from past experience with transportation cost and revenue trends make it challenging to forecast costs and revenues in order to demonstrate fiscal constraint. Peers reported growing uncertainty in estimating future revenues for several reasons:

- Federal revenue is uncertain because of short-term extensions of SAFETEA-LU and the lack of a new 6-year Federal surface transportation bill.

- State revenues are uncertain because of economic fluctuations affecting gas tax revenues, and in some cases, pending ballot referendums.
- Reductions in formula funds and more use of discretionary funds and local and private funding sources are more difficult to predict.
- Overall contraction of public funding is disturbing the dedicated State and local transportation revenue sources that transportation has enjoyed.
- There is uncertainty about the rate of inflation and specifically the construction inflation rate.

C. Agreeing on Projections, Estimates and Allocations

There are many stages of plan and program development at which coordination between State and regional agencies is required. During plan development, agencies must reach agreement on:

- Projected future statewide revenues.
- The allocation of those revenues to jurisdictions within the State.
- Estimated costs of proposed projects.
- Estimated timeline for completing proposed projects.
- Expected rate of inflation.

The peers use a range of approaches to develop and reach agreement on these items. PennDOT and CDOT use technical advisory committees made up of staff-level representatives of the DOT, MPOs, RPOs and transit agencies to develop and negotiate the financial elements of the plans. The technical committee work is often guided by memoranda of agreement (MOA) and/or memoranda of understanding (MOU) between the State DOT and the partner agencies that stipulate target resource allocations. Peers have found that technical committees that meet regularly help develop cooperative working relationships between agencies that, in turn, help agencies reach agreement on estimates and projections. In addition, technical advisory committees can share the work of studying funding and expenditure scenarios and carrying out extensive financial analysis to satisfy the inquiries and concerns of all of the partner agencies. This work reduces time spent by agency executives and board members negotiating satisfactory agreements.

PennDOT's Financial Guidance Work Group is a collaborative effort among a representative group of MPOs, RPOs, the FHWA and PennDOT to establish a financial framework for TIP and STIP development. PennDOT organized the work group in the mid-1990s in response to fiscal constraint issues, strife over fair-share funding, and the need for a higher level of cooperation between State and regional transportation agencies. All State and Federal capital funding is negotiated through the work group. The group develops revenue forecasts, resource allocations, deliverables, schedules, and focus areas for the TIPs. The Financial Guidance document produced by this work group is then adopted by consensus by the full body of MPOs and RPOs that make up the statewide Planning Partners. The document contains tables showing the allocation of funds by category to each region by year. Each MPO and RPO is free to develop its TIP within the limits of the Guidance by whatever negotiating process its local members determine, with PennDOT sitting as a local partner through its District Office. It should be noted that the process to allocate funds includes a set-aside of funds for discretionary application by the Secretary of Transportation and an allocation of funds to the Interstate Management Program. The IMP is treated like an additional MPO with statewide purview that collaborates with the respective MPOs and RPOs affected by the system.

PennDOT leadership has supported a collaborative atmosphere among work group members. The relationship between State and regional agencies was tense when the work group was initiated 15 years ago. It is now collegial and cooperative. The work group developed principles for its work, which include working cooperatively with a statewide perspective and addressing

near-term issues with a long-term strategic vision. Peers noted that the following characteristics of the work group are critical to its success.

- No unilateral decisions are made. In order to maintain the statewide perspective, all members are included in most decisions, and the group seeks consensus.
- The members develop the procedures that the group uses to make decisions. In this way, there is buy-in to the process and all members feel that decisions are made fairly.
- Members are expected to understand the interests of others. The members challenge each other to maintain a statewide perspective and to avoid advocating only for their particular region or agency.
- The group is most active during STIP development, but it is a standing committee that works through issues on an ongoing basis. This helps build strong working relationships and commitment to finding workable solutions. It also encourages members to compromise, knowing that they may be able to leverage compromises for success at a later time.

Colorado has developed a more inclusive process as a result of CDOT working with the MPOs on defining a resource allocation process that precedes each cycle of plan development. The State transportation commission appoints members to an executive committee and a technical committee. Both committees include members of TMAs, small MPOs, rural transportation planning regions and CDOT. The committees convene several times over 6 to 12 months. The technical committee develops revenue estimates and allocation scenarios that are reviewed by the executive committee. The executive committee prepares a final recommendation for consideration by the State transportation commission. The State transportation commission requested this process because the revenue allocation process had become contentious and time consuming. Both DRCOG and PPACG worked with CDOT to develop MOUs that addressed resource allocation expectations for their specific regions. Those MOUs took several years to develop, but are now in place. The revenue allocation process remains contentious, but the MOUs and more inclusive process have improved the process.

Arkansas State Highway and Transportation Department (AHTD) uses a top-down model for coordinating State and regional plans. AHTD develops revenue projections, (called fund marks in this State), project cost estimates, and expected rates of inflation. The AHTD provides them to the State's MPOs. Most MPOs in the State are small and therefore may lack the staff capacity to participate in development of these projections. Recently, AHTD has begun working more collaboratively with its largest MPO, Metroplan, and has consented to the MPO's own analysis and rationale for use in their area. AHTD and Metroplan are working to build a higher level of cooperation that will ease negotiations between the agencies.

MDOT has a committee that develops revenue projections, but resource allocation is done by MDOT staff. Several State laws and regulations guide the resource allocation process. See section VI.A. for more information on MDOT's resource allocation process.

Peer exchange participants agreed that proactive coordination and collaboration between State, regional, and local agencies involved in the transportation planning process helps to develop satisfactory projections and reduces disputes and delay related to negotiating the projections. The working relationships that develop between partner agencies through committee work also help in effectively managing amendments and modifications to adopted plans that arise. Statewide cooperative processes are also of benefit to the oversight agencies in that FHWA and FTA need only review a statewide process once and can be assured that the various MPOs' projections for Federal and State funds comply with the regulatory requirements.

D. TIP Modifications and Amendments

Adding or deleting a project from an approved TIP; increasing or decreasing available program revenues; and significant changes in a project's cost or schedule may trigger the need for an amendment of an approved program. While all modifications to the TIP must maintain year-to-

year fiscal constraint [see 23 CFR 450.216(o) and 23 CFR 450.326, provided in Appendix A], these more significant amendments trigger certain public outreach requirements. TIP amendments and modifications can become time consuming and labor intensive, and peers expressed frustration with the accounting burden associated with managing changes.

Federal regulations authorize States to set the terms for modifying and amending an adopted plan or program as long as the procedure is agreed upon by the planning partners and documented. Several of the peer States reported success using MOUs between the DOT and MPOs that establish thresholds for STIP changes that can be processed as administrative modifications and those that require formal amendments. TIP amendments require an open public comment period and MPO board approval, while administrative modifications may be processed immediately upon DOT and MPO staff approval. PennDOT uses a sliding scale that sets higher thresholds in regions with larger populations than in smaller regions. This reflects their determination that a “significant” project in a small region may not be significant in a larger region where overall expenditures are higher.

E. Electronic Amendment Processes

PennDOT uses an electronic amendment process that helps manage TIP and STIP amendments efficiently and helps ensure that the TIP and STIP remain consistent. The system automatically generates emails to both the DOT and the MPO when an amendment or modification is approved. Electronic signatures are used to approve changes. PennDOT had to work through some technological issues related to allowing these emails through multiple agency firewalls. PennDOT and DVRPC reported that the system has significantly reduced the processing time and paperwork involved in processing amendments.

CDOT processes STIP amendments on a weekly basis. CDOT uses a semi-electronic process for amendments. It is not completely electronic because CDOT has not been able to resolve firewall issues to allow electronic signatures. CDOT reported that even with the need to have hard copy signatures, the electronic process has helped streamline the amendment process.

New York State DOT (NYSDOT) has created an electronic database and associated web-based application for managing the STIP. This electronic STIP, or E-STIP, has significantly enhanced the efficiency of STIP and TIP development, as well as the approval and amendment processes for NYSDOT, FHWA-NY, and New York’s MPOs. For more information, see: http://planning.dot.gov/Peer/Connecticut/glastonbury_2008.asp.

V. Project Prioritization and Plan Development

Peers discussed that while fiscal constraint helps focus planning efforts on realistic programs that can be accomplished with expected funding, it can also reduce the ability to focus on needs assessment and visioning elements of planning. Peers expressed frustration that fiscal constraint can become so time consuming and restrictive that it seemingly transforms the planning documents into accounting exercises and makes it difficult to maintain a strong connection between policy goals and the projects that are funded through the STIP.

This section focuses on how fiscal constraint impacts the overall work program and planning capacity of transportation agencies. The first subsection describes the peer discussion related to the ability to develop and implement policy-driven transportation plans. The second sub-section focuses on how operations and maintenance needs are prioritized in the context of fiscal constraint. The final subsection focuses on transportation planning staff capacity.

A. Developing Policy-Driven Plans

The fiscal constraint requirement extends to the 4-year State and regional programs (TIPs and STIPs) as well as to 20-year metropolitan transportation plans (MTP). In Colorado, State statute requires the statewide long-range plan to be financially constrained.

The MTP, updated every four years, documents a region's collective vision and goals for transportation and sets priorities for spending Federal funds on transportation projects. The priorities identified in the MTP are supposed to be used to prioritize and select projects for inclusion in the TIP as well as in the later years of the MTP. However, peers expressed concern that fiscal constraint has the unintended consequence of upsetting this relationship between the MTP and TIP in two ways:

- Fiscally constraining the MTP reduces the focus on visioning and goal-setting.
- The backlog of projects from previous metropolitan plans compete for funding within the TIP, leaving little ability to change direction as a region's vision and goals change.

Although an unconstrained visioning chapter is permitted in the MTP, peers stated that long-range plan development usually focused on developing the constrained program. The reasons for this are two-fold. First, the resources required to develop the fiscally constrained long-range plan can lead to a loss of focus on visioning and needs assessment. Second, there is concern that inclusion of projects in the vision element may confuse interested parties about what is and is not included in the "real" plan.

More problematic, it seemed, was the issue that fiscal constraint in the current lean funding environment means that very few new projects can be added to plan updates. Over the twenty-year planning horizon, planning priorities may change. Without leadership or political will to remove outdated or unaffordable projects from plans altogether, it becomes difficult to introduce new projects that are driven by current goals and policies. In addition, congressional earmarks prioritize projects without regard for the project selection processes agencies use to match transportation expenditures to publicly vetted goals and objectives.

DVRPC has a successful approach for developing a policy-driven, financially constrained plan. DVRPC develops a needs assessment for all transportation expenditures based on input from local governments, transit operators, and MPO staff. Based on this assessment, the MPO board comes to agreement on target allocation percentages for seven categories of projects (see figure below). The first four categories are for operations and maintenance of the existing system. Major projects are evaluated across multiple factors and prioritized. Funding is reserved for minor projects in later years that may not yet be identified. Projects are then assigned to plan years guided by the policy-based target percentages for each type of project. The initial time period reflects the current TIP. Using this approach, DVRPC has been able to direct more spending to capital maintenance and reduce spending on new capacity. DVRPC's approach to plan development has helped communicate the realities of available revenues to the public and to political leaders. In showing that there is not sufficient revenue for legacy expansion projects, political leadership has begun to acknowledge that these projects need to be removed from long-range plans. It has also opened up discussions on how to create new regional revenue sources.

The figure below shows the target allocations in blue; the needs assessment in orange; and the needs assessment as a percentage of available revenue assigned to each of the seven project categories. Note that the needs assessment was 161 percent of the available revenue. DVRPC's approach helps prioritize projects in each category to reduce the program to the amount of expected revenues.

DVRPC Connections Financial Plan - PA Highway Needs Assessment		Total PA Highway						
		Millions of Year-of-Expenditure Dollars				% of Total Need	% of Revenue	Target Allocation
LRP ID	LRP Category / Subcategory	2010-2015	2016-2025	2026-2035	Total			
H1	Highway Reconstruction, Rehabilitation, Resurfacing, Restoration	\$1,463.9	\$3,329.7	\$4,551.0	\$9,344.7	25.6%	41.3%	30.0%
H2	Bridge Replacement, Restoration	\$3,797.5	\$7,356.5	\$8,619.9	\$19,773.9	54.1%	87.3%	42.5%
H3	Safety/Operational Improvements	\$333.8	\$766.3	\$1,134.4	\$2,234.5	6.1%	9.9%	8.0%
H4	ITS/Signal	\$178.7	\$617.4	\$970.0	\$1,766.1	4.8%	7.8%	6.0%
H5	New Capacity	\$771.9	\$1,119.9	\$500.6	\$2,392.4	6.5%	10.6%	10.0%
H6	Bike/Ped	\$84.6	\$202.2	\$309.2	\$596.0	1.6%	2.6%	1.75%
H7	Other	\$65.7	\$149.9	\$221.8	\$437.4	1.2%	1.9%	1.75%
Total PA Highway Needs (YOE \$\$)		\$6,696.1	\$13,541.9	\$16,307.0	\$36,545.0	100.0%	161.3%	100.0%
Total PA Hw Available Rev (YOE \$\$)		\$3,410.4	\$8,322.4	\$10,920.7	22,653.5	62.0%	100.0%	

DVRPC Target Allocations and Estimated Need for Project Categories. Prepared for LRP.

B. System Preservation: Prioritizing Operations and Maintenance Expenditures

Many States are facing escalating operating and maintenance costs related to roads and bridges reaching the end of their useful lives. These transportation assets require significant investments in operations and maintenance to retain safe and efficient operations, and Federal law requires that TIPs and STIPs demonstrate “with reasonable assurance” that the federally supported transportation system will be adequately operated and maintained [see 23 CFR 450.216(m) and 23 CFR 450.322(f) (10) (iv), provided in Appendix A]. Many transportation agencies are struggling with identifying sufficient funding and modifying resource allocation procedures to prioritize investment in preserving existing assets.

Federal guidance does not specify at what level a transportation project or system must be maintained and operated for purposes of estimating necessary revenues and costs for the financial plan for the STIP, TIP, or MTP. Furthermore, operations and maintenance (O&M) activities that do not involve Federal funds do not have to be included in the project listings of the TIP/STIP; it is acceptable to present non-Federal O&M costs and their funding sources at a systems-level of detail.

i) Definition/Clarification

Peers discussed the lack of clarity around the definition of operations and maintenance. Capital or preventive maintenance is an eligible use of Federal funding, and, especially in areas with

mature transportation systems, capital maintenance makes up a significant portion of spending on transportation. Operations improvements such as signal timing, signal systems, and variable messaging are also eligible uses for some categories of Federal funding. Other operations functions related to day-to-day management of transportation systems are not eligible. A 2003 FHWA memorandum provides a definition of operations and maintenance.¹

FHWA Operations and Maintenance (O&M) Definition: The range of activities and services provided by the transportation system and the upkeep and preservation of the existing system. Specifically, operations includes the range of activities/services provided by transportation system. Maintenance relates to the upkeep and preservation of the existing system.

For transit agencies, O&M costs represent an even larger proportion of expenditures. In some cases, Federal transit funding is available to support operations and preventive maintenance. Defining O&M tends to be more straightforward in regard to transit and the related historical data is more readily available.

ii) Prioritizing O&M

While many States and national organizations have been clamoring for more and better operations and maintenance funding for several years, political will to address the maintenance backlog still lags. Minor road maintenance and operational expenditures that are not eligible for Federal-aid, or that are eligible but require a higher local funding match than other capital projects, are crucial to maintaining transportation systems, but are difficult to prioritize in the current transportation planning and programming environment. Peers struggle to build support for prioritizing O&M when more Federal funds can be leveraged with expansion projects. O&M expenditures also lack the visibility and sense of improvement that other types of transportation projects enjoy. This adds to the lack of political support for O&M expenditures.

Several peers reported that funding for non-Federal aid O&M is typically whatever local revenue is left-over after matching funds to fully leverage available Federal dollars are assigned. In the current economic climate, this falls far short of the needed funding to maintain a state of good repair.

Estimating the need for operations and maintenance is challenging. Some States have advanced asset management systems that can be used to show the level of funding needed to maintain transportation systems at various condition standards. These tools are expensive to implement and maintain; and many States do not yet have these tools. There are several less comprehensive, less customized tools available from FHWA including HERS-ST and PONTIS that are designed to help agencies manage pavement and bridge assets. Pikes Peak Council of Governments used HERS-ST and PONTIS to estimate the need for O&M funding and to build support for increasing O&M funding.

AHTD prepares O&M needs assessments for the State, but does not currently provide those assessments directly to the State's MPOs. AHTD noted that providing statewide needs assessments to MPOs may be a way to increase support for more O&M spending in TIPs.

DVRPC's planning process described in Section IV.B sets a target for the percent of transportation revenues that will be spent on operations and maintenance. By directing funding shares based on needs assessments DVRPC has been successful in increasing commitments to state of good repair projects.

¹ FHWA Office of Operations. <http://plan4operations.dot.gov/glossary.htm>.

Peers expect future Federal transportation bills to require performance measurement including requirements for demonstrating state of good repair. This requirement could raise the incentives for prioritizing O&M.

C. Staff Capacity

Demonstrating fiscal constraint requires a significant amount of financial planning work. During the development of TIPs, STIPs, and MTPs, agency staff must develop revenue projections and cost estimates that reflect a variety of economic factors such as inflation, construction cost index, tax revenues, and travel demand. Financial analysis is required for both TIP and MTP updates and amendments.

Peers discussed the challenges associated with developing staff capacity in financial planning. Financial planning is not a skill that most transportation planners possess. Transportation agencies are challenged to find staff with both transportation planning and financial planning skill sets. Smaller agencies in particular cannot hire specialized staff to perform financial planning tasks. Peers representing both large and small agencies expressed concern that the financial planning required by fiscal constraint competes with an agency's ability to carry out other transportation planning functions. This fact also underscores another advantage to a cooperative process where all the partners bring their resources to bear in developing financial information.

VI. Estimating Revenues and Costs

State DOTs and partner agencies must develop and agree on revenue forecasts and cost estimates for Federal aid as well as State and local matching funds for the Federal aid program. Revenue forecasts must be estimated for four years into the future for TIPs and STIPs and for 20 years into the future for MTPs and cost estimates must be adjusted for expected inflation to be presented in year of expenditure (YOE) dollars [see 23 CFR 450.216(m) 23 CFR 450.322(f), 23 CFR 450.324(h) provided in Appendix A]. The financial estimates for the outer years of the MTP may be less precise, and cost ranges may be used.

Historically costs and revenues had followed fairly predictable linear growth patterns; however, since the mid-2000s both costs and revenues have proven to be quite volatile, drawing into question the methodologies and ability to accurately predict future revenues and costs.

This section describes peer discussion of issues and strategies for projecting revenues and costs. The first subsection outlines many of the sources of uncertainty that were discussed. The second subsection describes the revenue forecasting process and some successful strategies for reaching agreement on revenue forecasts. The third subsection describes the cost estimation process along with some successful strategies peers reported for estimating construction inflation and for managing the cost component of major projects and non-traditional projects. The final subsection describes considerations related to non-traditional project finance.

A. Revenue Forecasting

Historically, Federal formula revenue has been the primary revenue source for capital projects. State and local matching funds were typically raised through dedicated funding streams, such as State gas taxes and registration fees. In recent years, Federal formula aid has shrunken as a percentage of capital spending and other revenue sources, including discretionary grant programs, toll revenue, State bonds, local funds, and private investment are becoming more significant.

Forecasting revenue from all of these sources over a 20-year horizon is challenging and inexact. Peers agreed that estimating revenues conservatively is preferable to over-estimating revenues

because it is easier to advance projects if more funding than expected becomes available than it is to reduce a program if funding does not reach expectations. Each of the peers emphasized the need to build in some flexibility in revenue estimates.

i) Federal Formula Revenue

Federal formula revenues make up a large portion of funds available to States and MPOs for capital programs. Federal funds are usually authorized in 6-year Federal transportation legislation. The multi-year Federal-aid program defined in the legislation makes it possible for States to calculate their expected Federalaid for each of the years. Typically, Congress appropriates about 85 to 90 percent of the funding authorized in the legislation each year. Occasionally, Congress periodically issues rescissions, which reduce the authorized funding levels available to the States,. Three of the four peer States develop revenue forecasts based on authorized funding levels. CDOT has assumed an 80 to 90 percent obligation limitation to estimate Federal revenue in past STIPs.

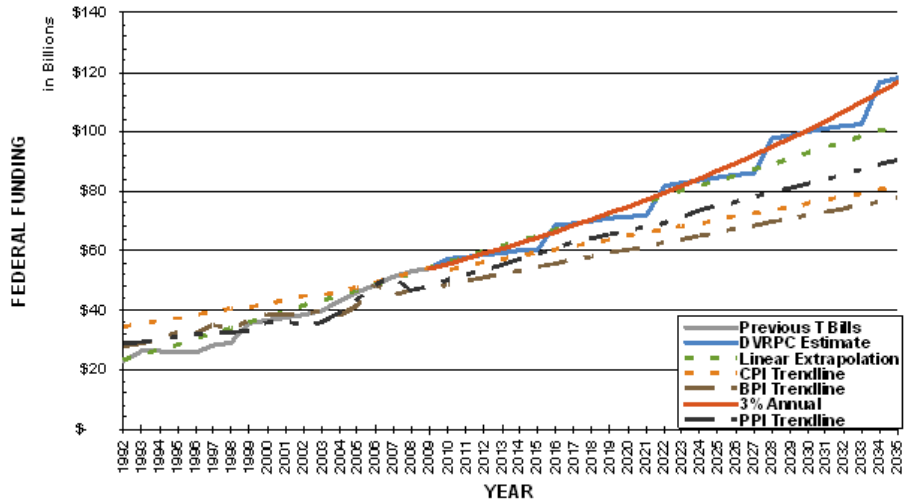
Since SAFETEA-LU expired in September 2009, Congress has passed several short-term extensions in funding. These extensions authorize short-term continuation of the funding levels and programs of SAFETEA-LU. Without a reauthorized 6-year bill, transportation agencies have a less certain indication of future Federal-aid to use in revenue forecasting. Peers are assuming that similar Federal aid levels and programs will continue; however, they expressed concern that this assumption may be flawed. Several factors, including a new administration, recent Federal programs focusing on livability and inter-agency coordination, discussion of performance measures, transition to a system preservation focus, and decline of the transportation trust fund, are leading many to speculate that the next reauthorization may be quite different from the current program.

Even more challenging than estimating Federalaid for the 4-year STIP is estimating Federalaid for the 20-year MTP. With no information to indicate otherwise, peers must rely on past trends in funding to forecast future funding. This is also the approach provided in Federal guidance. The figure below shows several trends that DVRPC examined to develop 20-year Federal revenue projections. In 2010 the various trends indicate Federal aid between 50 and 60 billion dollars per year. By 2035, the range expands to 80 to 120 billion dollars per year.

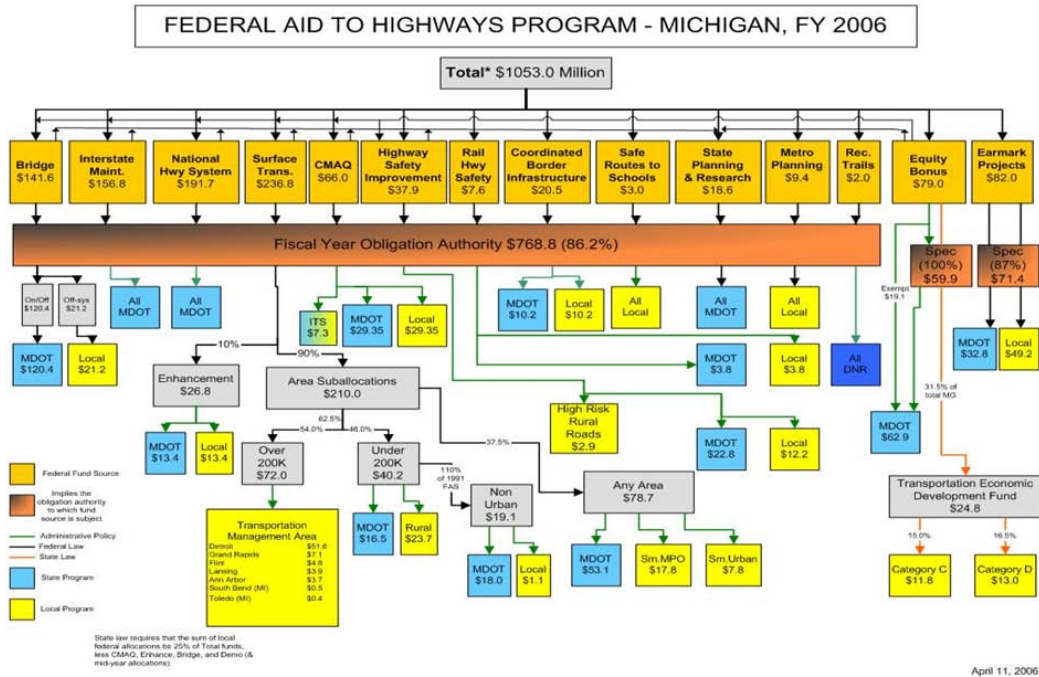
DVRPC Connections

Revenue Projections

ANNUALLY AUTHORIZED FEDERAL TRANSPORTATION FUNDING
LEVEL
(Nationwide)



The total Federal-aid revenue projection for each year must be subdivided into the particular funding programs, each of which may have different local matching fund requirements and project eligibility. MDOT shared the figure below, which details the programs that make up the total Federal-aid program and shows how those funds are distributed between the State and its planning partners. Note that the different line colors indicate a Federal law, State law or administrative policy that restricts how the Federal revenues are distributed to State and local programs.



MDOT FY 2006 Federal Aid Revenue Forecast and Allocation

MDOT develops these forecasts internally, in coordination with the State's Estimation and Revenue Forecasting Division (ERFD). MPO's, FHWA, public interest groups, and legislative committees are peripherally involved in revenue forecasting, but it is primarily MDOT's responsibility. See Section IV for additional information about the collaborative process other peers use to develop financial projections.

ii) State and Local Revenues

Each of the peer States reported that State transportation revenues come primarily through dedicated revenue streams, such as the State gas tax and motor vehicle fees. These revenue streams have historically been fairly predictable based on trends in population, registered vehicles, and economic growth. With the recent economic decline, coupled with slow growth in registered vehicles, many States have seen or expect to soon see insufficient funding in these dedicated revenue streams to maintain current program levels, and perhaps not enough revenue to meet the required local matching funds to fully utilize available Federalaid. In addition, higher fuel economy standards are drawing gas tax revenue projections into question.

MDOT reported that dedicated revenue streams have made State transportation funding predictable and secure from cuts. However, now that the dedicated funding streams are insufficient, transportation must compete with other State general fund expenditures, such as

education and social services, to close the funding gap. So far, the Michigan legislature has provided the additional funding, but future funding is uncertain.

The local matching funds for RTD's FasTracks transit development plan are anticipated to be raised through a 0.4 cent sales tax approved by voters in 2004. Seeing that sales taxes were falling well below anticipated levels, and also adjusting the implementation plan based on 50 percent increase in total estimated cost, RTD convened a Sales and Use Tax Working Group to develop revenue forecasts specifically for revenues dedicated to the FasTracks transit development plan.

CDOT recently completed the development of a revenue forecasting model. The model, developed with consultant assistance and in partnership with CDOT's planning partners, estimates transportation revenues based on inputs that describe the population, the economy and other factors that are expected to influence transportation revenues. The model assigns expected probabilities to various funding levels for each funding source and outputs revenue forecasts by year over a six-year horizon and provides a total revenue forecast for a 25-year horizon for planning purposes. The model aggregates expected revenues from:

- Federal sources (includes both apportionments and obligation limits)
 - Formula aid
 - Special aid
 - Exempt aid
 - Transit revenues
- State sources
 - Highway User Tax Fund
 - Motor fuel tax
 - Motor vehicle registration
 - FASTER safety
 - Penalties
 - Interest
 - Cash collections
 - Other revenues
 - Permit fees,
 - Services charges,
 - Sales,
 - Cash interest,
 - Bond proceeds,
 - State infrastructure bank payments
 - State aviation fund
 - CDOT Safety education programs
 - State bridge enterprise
 - General Fund Transfers,
 - Local Match for Federal aid programs (for example sales and property taxes)

iii) Discretionary and Private Revenues

Discretionary revenues include grant funds that States may apply for in addition to formula funds. The most well-known and significant discretionary program is FTA's Section 5307 New Starts, Small Starts and Very Small Starts program. The recent USDOT Transportation Investment Generating Economic Recovery (TIGER) grants provided \$1.5 billion dollars in discretionary transportation funding. There is speculation that future Federal transportation legislation will have more discretionary funds that may be linked to performance measurement.

Currently, State DOTs and their partner agencies negotiate a level of discretionary funding to be included in the TIP or MTP that seems reasonable. In some cases, past experience in earning discretionary grants is used as a guide. Discretionary funding levels are very hard to predict. FHWA requires only that the State DOT and its partners reach agreement on a level of funding that reflects past experience.

Private revenues are a significant issue in States where public-private-partnerships and other innovative finance arrangements are permitted. These considerations are discussed further in Section VI.C.

B. Project Cost Estimation

Transportation agencies must estimate project costs for inclusion in TIPs, STIPs and MTPs. Costs must be shown in year of expenditure (YOE) dollars, meaning that project schedules must also be estimated and multi-year project costs must be broken down into individual year expenditures. Often when cost is first estimated, a project may be in the conceptual or planning stage. Estimates must be refined as project details are determined. Changes in cost estimates can set off a ripple effect in TIPs and STIPs in the effort to maintain fiscal constraint.

This section describes the cost estimating practices reported by the peers. The first subsection focuses on how cost estimates are developed and refined throughout a project lifecycle. The second subsection focuses on the YOE requirement and tactics for estimating construction inflation and project timelines. The third and fourth subsections describe cost estimating practices for major projects and non-traditionally financed projects, respectively.

i) Refining Estimates from Concept through Construction

Project costs first need to be estimated for inclusion in the MTP or TIP when the project is in the conceptual phase. At this stage, multiple alternatives may be under consideration and little to no engineering has been done. Project scopes and cost estimates at this stage are developed based on expected design features, similar past experience, and professional judgment. Small, routine projects, such as repaving, may be lumped together into one estimated program cost at this stage. As projects proceed through design and construction, scope and cost must be revised and refined several times. Changes in cost estimates and schedule may trigger TIP and STIP amendments needed to maintain fiscal constraint, as described in Section IV.D.

Project cost estimates can change for a number of reasons, including:

- Refining the project scope.
- Incorporating unanticipated design features due to engineering or community requests.
- Revising the maintenance of traffic plan.
- Completing environmental review.
- Adjusting for construction inflation.

These factors are constantly in flux, and agencies have different strategies for developing and refining estimates.

MDOT project managers work with MPOs, transit agencies, and local jurisdiction to develop project descriptions and initial cost estimates both for long-range plans and TIPs. MDOT has a standing project review board made up of experienced engineers that reviews and revises cost estimates at five stages as part of a larger quality assurance procedure. The review board's experience is relied on to ensure that at each stage of the project lifecycle the cost estimate is as reasonable and accurate as possible.

PennDOT develops bottom-up cost estimates at five stages of project development. In the DVRPC region, project cost estimates are updated each year as part of the TIP update cycle. Nine months prior to the adoption of a new TIP, DVRPC and PennDOT engineering project managers are asked to prepare cost estimates and best-case schedules for each TIP project with a phase in the next TIP timeframe or beyond. These estimates are adjusted to YOE dollars using PennDOT's inflation estimates as phases are moved from year to year in the effort to balance the program costs by funding category to the Financial Guidance targets. During the operative period of a TIP, PennDOT has a standing executive committee that reviews any changes in cost estimates that exceed \$1 million. The committee assesses the change in cost to provide some quality control and manage scope creep. The committee can either approve the new estimate or require the project manager to revise the scope and cost estimate.

There was also discussion of the Washington State approach to cost estimation. Washington State estimates an expected range for project costs that reflects the level of uncertainty in the cost. The 90th percentile of the range is used in the TIP and STIP to show fiscal constraint. Carrying a range of project costs may be a good tool to communicate the uncertainty of the estimates to the public.

Each State struggles with determining how often to revise cost estimates. Peers noted that project cost could be revised on a daily basis, leading to an endless loop of STIP and TIP amendments. Colorado updates the STIP every week. DVRPC processes amendments and modifications to the TIP on a monthly basis, and PennDOT reviews total obligations every quarter by region to better manage the overall STIP and highlight regional performance. MPO and DOT staffs work with project managers to review cost adjustments and their impacts on fiscal constraint and conformity. The financial constraint balance may be retained either by drawing on reserve funds or by shifting funds from another project.

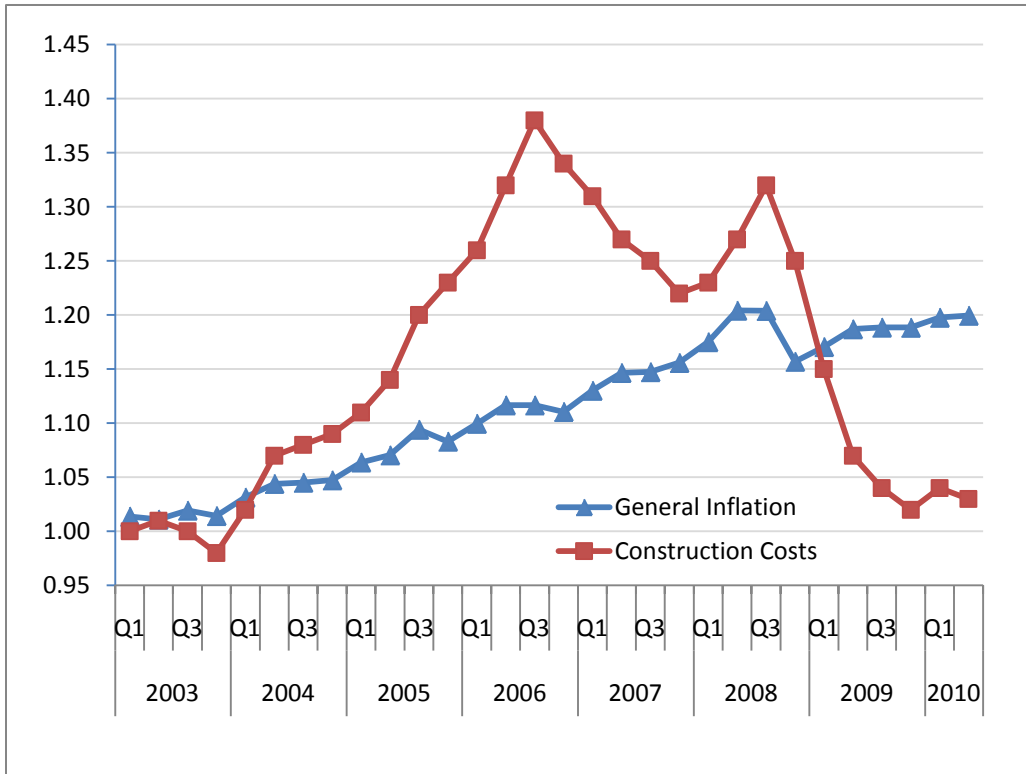
ii) Year of Expenditure (YOE): Estimating Construction Inflation

Since December 2007, FHWA and the FTA have required cost and revenue estimates for the TIP, STIP, and MTP to use an inflation rate(s) to reflect YOE dollars based on reasonable financial principles and information, developed cooperatively by the State DOT, MPOs, and public transportation operators [see 23 CFR 450.216(l), 23 CFR 450.322(f) (10) (iv), and 23 CFR 450.324(h)]. Year of Expenditure (YOE) is intended to acknowledge the impact of future inflation on project costs and to ensure consistency in project cost estimating from concept through construction. Peers expressed concern that fiscal constraint requirements, in particular, the requirement that costs and revenues be expressed in YOE dollars was confusing to members of the public and leading to transportation plans with a misleading and false image of precision. Based on these concerns, peers repeatedly emphasized the need for flexibility in the financial element of plans.

Federal guidance indicates that future project costs generally will be tied to construction cost indices, while revenue forecasts track more closely with past trends in tax receipts and cost of living indices.² The recent volatility of construction costs has brought assumptions about steady inflation into question. A spike in construction inflation in the mid-2000s significantly reduced the buying power of transportation dollars. More recently States have experienced deflation in construction costs.

² http://www.fhwa.dot.gov/planning/guidfinconstr_ga.htm

The figure below shows the rate of construction cost inflation and general inflation since 2003. Note the volatility in construction costs, with rapid inflation in 2004 to 2006 and 2008, and two periods of deflation.



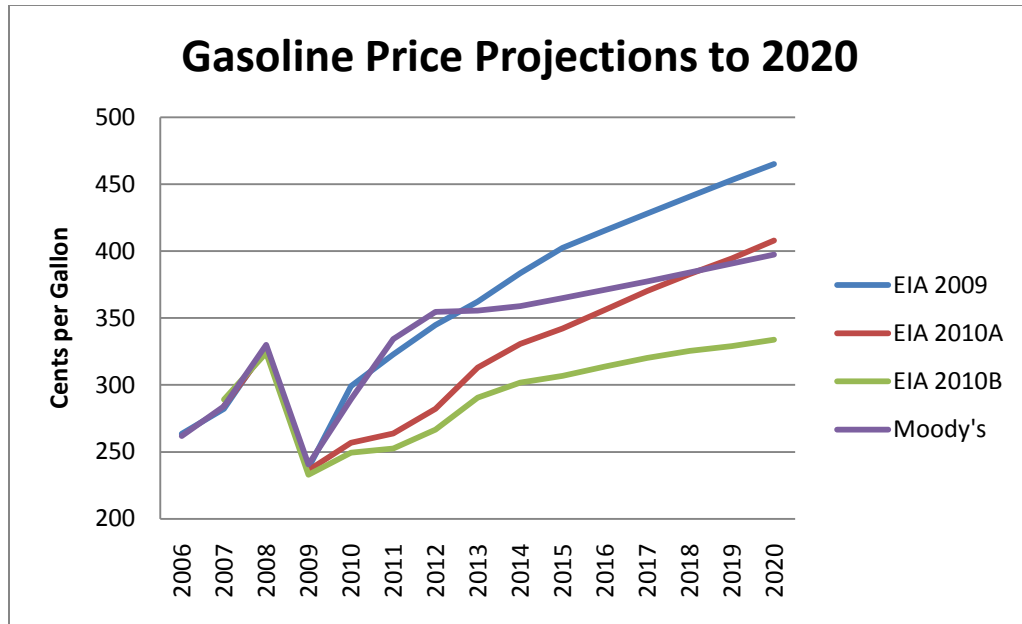
Source: FHWA, Office of Highway Policy Information, National Highway Construction Cost Index (NHCCI) <http://www.fhwa.dot.gov/ohim/nhcci/pt1.cfm> and Bureau of Labor Statistics, Consumer Price Index <ftp://ftp.bls.gov/pub/special.requests/cpi/cpi.ai.txt>.

Year	Quarter	General Inflation	Construction Costs
2003	Q1	1.01	1.00
2003	Q2	1.01	1.01
2003	Q3	1.02	1.00
2003	Q4	1.01	0.98
2004	Q1	1.03	1.02
2004	Q2	1.04	1.07
2004	Q3	1.05	1.08
2004	Q4	1.05	1.09
2005	Q1	1.06	1.11
2005	Q2	1.07	1.14
2005	Q3	1.09	1.20
2005	Q4	1.08	1.23
2006	Q1	1.10	1.26
2006	Q2	1.12	1.32
2006	Q3	1.12	1.38
2006	Q4	1.11	1.34
2007	Q1	1.13	1.31
2007	Q2	1.15	1.27
2007	Q3	1.15	1.25
2007	Q4	1.16	1.22
2008	Q1	1.18	1.23
2008	Q2	1.20	1.27
2008	Q3	1.20	1.32
2008	Q4	1.16	1.25
2009	Q1	1.17	1.15
2009	Q2	1.19	1.07
2009	Q3	1.19	1.04
2009	Q4	1.19	1.02
2010	Q1	1.20	1.04
2010	Q2	1.20	1.03
2010	Q3	1.20	0

Peers have turned to a variety of sources for insight into future construction cost inflation:

- State and local project cost histories (State DOT Construction Cost Indexes).
- Consumer price index (CPI).
- US Energy Information Agency (EIA) fuel price forecasts.
- Local, national, and global economic projections.

Metroplan uses gasoline price projections prepared by the Energy Information Administration (EIA) to anticipate the rate of construction inflation.



Source: Metroplan, compiled from Energy Information Agency and Moody's Analytics data.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
EIA 2009	264	282	328	238	299	323	345	362	383	402	415	428	441	453	465
EIA 2010A		284	327	236	257	264	282	313	331	342	356	370	383	394	408
EIA 2010B		289	324	233	249	253	267	291	302	307	314	320	325	329	334
Moody's	262	284	330	241	289	334	355	355	359	365	371	377	384	391	397

As part of the financial management program for Denver's transit development plan, FasTracks, the RTD convened a construction inflation workshop in December 2009 including RTD staff, Federal, State, and local government as well as senior transit consultants and economists. Because construction inflation can have such a dramatic impact on the cost of implementing the transit program, this workshop was designed to develop detailed, disaggregate assessments of supply and demand for the raw materials and labor needed. The workshop helped build confidence in the cost estimates for the program. RTD anticipates holding a similar workshop to update the cost estimates each year. The workshop participants concluded that RTD's methodology was sound.

In addition to struggling with accurately projecting the rate of inflation, peers struggled with predicting the exact year of expenditure for projects in the later years of long-range plans. Project timelines are difficult to predict, particularly as new priorities may emerge that affect project selection. Peer MPOs group outer years of the MTP program into multi-year groupings to avoid presenting false precision to the public. Year of Expenditure is then based on the mid-point of the grouped years. Their experiences underscore the importance of regularly revisiting inflation forecasts.

The intent of the YOE requirement is not to require precision, but rather reasonable and honest projections. Peers agreed that construction inflation and project schedules can be reasonably estimated for TIP time periods in order to present the program in YOE dollars, but that estimating cost, inflation, and schedule for the outer years for the MTP is problematic.

iii) Major Projects

Estimating costs for major projects, particularly those in urban areas, is particularly challenging. Federal-aid projects exceeding a total cost of \$100 million are required to submit an annual financial plan including a detailed cost estimate for FHWA review. FHWA and FTA provide guidance for estimating costs for major projects.³

The RTD FasTracks transit expansion plan includes 122 miles of new light rail and commuter rail, 18 miles of bus rapid transit, and many associated transit facilities and parking. RTD district voters approved a 0.4 cent sales tax increase in 2004 to fund the expected local portion of the \$4.7 billion program. RTD's initial cost estimate was based on sound, standard practice, and yet in 2007, the program cost was re-estimated at \$6.5 billion. The cost increase is attributed to a number of factors, including unexpected rapid growth in construction inflation and changes related to design and scope as the projects have advanced through design. This level of cost volatility is not uncommon for this scale of project, but it is very troubling both from a public and political support standpoint and a financial planning standpoint.

RTD has instituted a thorough process of analysis and review to monitor project costs and to try to increase the reliability of the costs estimates for the plan going forward:

- Third Party Review: RTD is funding DRCOG, the local MPO, to hire independent private consultants to provide third party review of RTD cost estimates. FTA also reviews RTD's estimates because New Starts funding is involved.
- Annual Program Evaluation: RTD hosts industry experts for an annual review of factors that customarily impact cost and schedule.
- Construction Inflation Workshop: as described in Section C.2 above, local planning partners and national experts were convened to develop an in-depth review of construction inflation specific to this plan and the Denver construction market.
- Bottom-up Cost Estimate at 30 percent Design: Project costs are estimated from scratch when each project segment reaches the 30 percent design stage.
- Higher Contingencies: Based on RTD's experience, higher contingencies will be used for early design phases of the remaining project segments.

In September 2009, RTD issued a Lessons Learned report, with chapters devoted to both cost estimating and revenue forecasting: http://www.rtd-fastracks.com/media/uploads/main/Lessons_Learned_Master_Document_FINALWEB-9-11-09.pdf.

C. Non-Traditional Project Finance: Stewardship of public interest and financial risk

Many States are employing public-private-partnerships (PPPs) and other non-traditional project financing. Innovative finance offers opportunities to build large projects that would not otherwise exist because of the lean public funding environment.

FHWA guidance indicates that a PPP project may be considered reasonable if:

- There are clear expressions of support by State, local and regional decisionmakers,
- A strategy exists for securing necessary approvals within the time period,
- A State or local jurisdiction has had past success in implementing PPPs,
- State enabling legislation is in place, or efforts are underway to enact it, and
- there is interest in the project from the investment community.⁴

There is very little State or Federal guidance on *how* non-traditionally financed projects should be incorporated into plans and determinations of fiscal constraint. It is not clear how to discern

³ <http://www.fhwa.dot.gov/programadmin/mega/mpguide.cfm>

⁴ http://www.fhwa.dot.gov/planning/guidfinconstr_ga.htm

whether various private revenue sources meet the “reasonably anticipated” standard for demonstrating fiscal constraint. There are open questions about what kind of analysis is needed and by whom it should be performed.

In some States, including Michigan, Pennsylvania and Arkansas, PPPs are not legally allowed. Pennsylvania, Michigan and Colorado have experience incorporating toll authority costs and revenues. Colorado has experience with private tolling authorities.

CDOT and DRCOG have included several toll road projects in fiscally constrained plans. DRCOG requires the Colorado Tolling Enterprise (now named the High Performance Transportation Enterprise (HTPE) to provide capital, operating, and maintenance costs and to describe the public sector responsibility if anticipated toll revenues fall short once the toll road improvement is built.

However, State law allows Public Highway Authorities (PHA) and Private Toll Highway Companies to build toll roads as well. DRCOG had been in the process of updating its information requirements to address proposals by these other types of entities, when a PHA proposed a plan amendment to construct a part of the missing quadrant of the Denver area beltway. While DRCOG was proposing that these entities provide the same financial data as CTE was required to provide as well as detailed costs for environmental mitigations and land use assumptions, the PHA successfully argued that its project be evaluated without such data (essentially “grandfathered”). By approving DRCOG’s conformity finding, FHWA and FTA certified that this level of review satisfied the fiscal constraint requirement; however, public interest groups have threatened to challenge this determination.

Currently the level of review varies substantially on a project by project basis. Standards of public agency review and stewardship will likely need to be developed in the future. The tentative consensus among workshop participants was that a lower level of transportation agency scrutiny is appropriate for these projects because less (and in some cases, no) public risk or cost is being assumed. Planning agencies have a responsibility to determine whether the proposed project fits with the regional plan, vision, and air quality goals, and therefore whether it should be included in adopted plans. From a financial perspective, the public scrutiny should be in proportion to the financial risk being assumed by the public. Generally, private investors scrutinize the financial plans. Private investors may evaluate the financial plans by different metrics than public agencies would.

VII. Conclusions and Next Steps

During the workshop, peers discussed many challenges related to fiscal constraint and shared noteworthy successful practices for managing fiscal constraint. Peers seemed to agree that inclusive processes that build mutual respect and understanding between agencies are powerful tools for managing the uncertainty related to financial projections and reaching agreement about reasonable expectations. In addition, memoranda of understanding, and State or local regulations that set boundaries and criteria for resource allocation and other aspects of financial constraint are helpful. Involving the Federal oversight agencies ensures that they understand the assumptions, methodologies and conclusions of the financial planning efforts. FHWA and FTA also stressed the importance of thorough documentation.

In addition to the discussion of tactics and strategies for managing fiscal constraint, there was some discussion of the consequences of fiscal constraint. While peers agreed that fiscally constraining short-term TIPs and STIPs is appropriate, they also noted that fiscal constraint of long-term plans reduces adaptability and is technically challenging. Finally, peers noted that demonstrating fiscal constraint may become more challenging in coming years if, as many expect, transportation agencies shift toward system preservation, livability and performance management, and if inflation rates remain volatile as the United States recovers from the current

economic downturn. Another factor likely to make fiscal constraint more challenging is the increase in alternative financing, such as public-private-partnerships and privately financed transportation projects.

VIII. About the Transportation Planning Capacity Building (TPCB) Program

The [Transportation Planning Capacity Building \(TPCB\) Program](#) is a joint venture of the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) that delivers products and services to provide information, training, and technical assistance to the transportation professionals responsible for planning for the capital, operating, and maintenance needs of our nation's surface transportation system. The TPCB Program website (www.planning.dot.gov) serves as a one-stop clearinghouse for state-of-the-practice transportation planning information and resources. The clearinghouse includes over 70 peer exchange reports covering a wide range of transportation planning topics.

The [TPCB Peer Program](#) advances the state of the practice in multi-modal transportation planning nationwide by organizing, facilitating, and documenting peer events to share noteworthy practices among State departments of transportation (DOTs), Metropolitan Planning Organizations (MPO), transit agencies, and local and Tribal transportation planning agencies. During peer events, transportation planning staff interact with one another to share information, accomplishments, and lessons learned from the field and help one another overcome shared transportation planning challenges.

Appendix A: Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ADOT	Arkansas Department of Highways and Transportation
CDOT	Colorado Department of Transportation
CPI	Consumer Price Index
CTE	Colorado Tolling Enterprise
DOT	Department of Transportation
DRCOG	Denver Regional Council of Governments
DVRPC	Delaware Valley Regional Planning Commission
EIA	(U.S.) Energy Information Administration
ERFD	(Michigan) Estimating and Revenue Forecasting Division
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GVMC	Grand Valley Metropolitan Council
MDOT	Michigan Department of Transportation
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
NYS DOT	New York State Department of Transportation
O&M	Operating and Maintenance
PennDOT	Pennsylvania Department of Transportation
PPCOG	Pike's Peak Council of Governments
PPP	Public Private Partnership
RFI	Request for Information
RPC	Regional Planning Commission
RTD	Regional Transit District (Denver Metropolitan Area)
SAFETEA-LU	Safe, Affordable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
STIP	Statewide Transportation Improvement Plan
TIP	(Metropolitan) Transportation Improvement Program
TPCB	Transportation Planning Capacity Building
YOE	Year of Expenditure

Appendix B: Workshop Agenda

Time	Agenda Item	Presenter/Description
8:30 am	Welcome	FHWA and local hosts welcome participants and open the exchange. Provides context on what motivated the peer exchange request and how FHWA plans to use information gathered during the exchange.
8:45 am – 9:00 am	TPCB Overview, Goals and Deliverables	TPCB staff review the program mission and overarching goals, describe products and plans for documentation, and establish ground rules for the day's discussions.
9:00 am – 9:30 am	Participant Goals Peer and other participating staff share their goals for the day, including any specific information they hope to gather during the exchange.	Each agency provides <i>brief</i> introductory comments (<i>2-3 minutes each</i>) addressing: <ol style="list-style-type: none"> 1. What are examples of best practices your agency has incorporated in the fiscal constraint process? 2. What issues are most challenging to your agency in demonstrating fiscal constraint?
9:30 am– 10:45 am	Collaboration-The Cooperative Process Among State DOTs, MPOs, and Transit Agencies	<p>Presentations:</p> <ol style="list-style-type: none"> 1. PennDOT: Financial Guidance Work Group 2. Arkansas DOT: A State Perspective 3. CDOT & DRCOG: Collaborative Process between State DOT and MPO <p>Peer representatives give brief presentations (5-10) minutes) that summarize how they collaborate with other transportation agencies on fiscal constraint.</p> <p><i>At end of presentations, a brief Q&A session and facilitated discussion.</i></p>
10:45 am	Break	
11:00 – 12:30 pm	Revenue Forecasting Roundtable discussion on how agencies develop revenue forecasts.	<p>Presentations:</p> <ol style="list-style-type: none"> 1. Michigan DOT: Developing Revenue Forecasts 2. DRCOG: Incorporating Innovative Financing and Private Sector Funding into Long Range Plan Forecasting <p>Facilitated discussion to highlight challenges and successes with revenue forecasting.</p>
12:30 pm to 1:30 pm	<i>Lunch</i>	<i>Participants have lunch on their own and return for the afternoon working session.</i>
1:30 –3:00 pm	Project Cost Estimation Description of the Process of Project Cost Estimation	<p>Presentations:</p> <ol style="list-style-type: none"> 1. DVRPC and PennDOT: Estimating Project Costs and Ensuring Consistency of Methodology between a State DOT and MPO 2. RTD: Major Transit Projects

		Facilitated discussion to highlight challenges and successes with project cost estimation.
3:00 – 3:15	Break	
3:15 – 5:00 pm	Accounting for operations and maintenance costs in the plans/transportation improvement programs	<p>Presentations:</p> <ol style="list-style-type: none"> 1. Pike's Peak Area COG: Estimating Operations and Maintenance at the MPO 2. RTD: Major Transit Projects 3. PennDOT: Estimating Operations and Maintenance Costs at the State Level <p>Facilitated discussion to highlight challenges and successes with operations and maintenance costs.</p>
Day 2: Thursday, October 7, 2010		
Time	Agenda Item	Presenter/Description
8:00 – 10:00 am	Using the Financial Element of the Metropolitan Transportation Plan to “Inform” the Fiscal Constraint Determination of the TIP and STIP	<p>Presentations:</p> <ol style="list-style-type: none"> 1. Metroplan: Little Rock Perspective 2. Grand Valley MPO: Grand Rapids Perspective 3. DVRPC: Developing a Fiscally Constrained Plan <p>Facilitated discussion to highlight challenges and successes with coordinating financial element of the MTP and TIP/STIP.</p>
10:00 – 10:15 am	Break	
10:15 – 11:15 am	Federal Listening Session: Fiscal Constraint	Facilitated discussion for participants to share feedback on how Federal partners can support the transportation agencies comply with fiscal constraint.
11:15 – 11:45 am	Wrap-Up: Best Practices and Take-Aways	Facilitated discussion to get input from participants on best practices heard throughout the day and reflect on what people learned and are taking home from the exchange.
11:45 – 12:00 noon	TPCB Peer Program Evaluations	Participants fill out TPCB peer program evaluation forms.

Appendix C: References

“Addressing Fiscal Constraint and Congestion Issues in State Transportation Planning,” Transportation Research Circular, Number E-C062, Wood’s Hole Massachusetts, July 14–16, 2002.

“A Guide to Federal and State Financial Planning Requirements,” FHWA, FTA, and CALTRANS, April 28, 2004.

“Best Practices in Managing STIPS, TIPS, and Metropolitan Transportation Plans in Response to Fiscal Constraints,” National Cooperative Highway Research Program Project 20-68A, 2010.

“Federal Highway Administration, “Domestic Scan Tour: Financial Planning and Fiscal Constraint,” 2004.

Federal Register, Federal Highway Administration 23 CFR Parts 450 and 500, Federal Transit Administration, 49 CFR Part 613, “Statewide Transportation Planning; Metropolitan Transportation Planning; Final Rule,” United States Department of Transportation, February 14, 2007.

“Financial Guidelines for MPO Long Range Plans,” Florida Metropolitan Planning Organization Advisory Council, October 25, 2007, as amended October 23, 2008, Tallahassee, Florida.

“Financial Planning and Fiscal Constraint for Transportation Plans and Programs: Questions and Answers,” FHWA, July, 2009

“Fiscal Constraint Definitions,” FHWA, February 1, 2008.

“Statutory and Regulatory References to Fiscal Constraint,” FHWA, July 11, 2007.

“Summary Report: MPO Peer Workshop on Addressing Financial Uncertainty and Year of Expenditure Requirements, hosted by Houston-Galveston Area Council, Houston Texas, December 13 – 14, 2007,” prepared for FHWA, January 2008.

“TIP/STIP Guidance,” New York State Department of Transportation, Policy and Planning Division, Statewide Planning Bureau, October 2008.

“White Paper: Fiscal Constraint – or Fiscal Restraint? Issues of Compliance with Federal Requirements for STIPs, TIPs, and Long-Range Plans,” Prepared by Donald H. Camph, Aldaron, Inc., Los Angeles, CA, for the AASHTO Standing Committee on Planning, November 2008.

Appendix D: Excerpts from Statewide and Metropolitan Transportation Planning Final Rule, February 14, 2007

§ 450.216 Development and content of the statewide transportation improvement program (STIP).

(a) The State shall develop a statewide transportation improvement program (STIP) for all areas of the State. The STIP shall cover a period of no less than four years and be updated at least every four years, or more frequently if the Governor elects a more frequent update cycle. However, if the STIP covers more than four years, the FHWA and the FTA will consider the projects in the additional years as informational. In case of difficulties developing a portion of the STIP for a particular area (e.g., metropolitan planning area, nonattainment or maintenance area, or Indian Tribal lands), a partial STIP covering the rest of the State may be developed.

(b) For each metropolitan area in the State, the STIP shall be developed in cooperation with the MPO designated for the metropolitan area. Each metropolitan transportation improvement program (TIP) shall be included without change in the STIP, directly or by reference, after approval of the TIP by the MPO and the Governor. A metropolitan TIP in a nonattainment or maintenance area is subject to a FHWA/FTA conformity finding before inclusion in the STIP. In areas outside a metropolitan planning area but within an air quality nonattainment or maintenance area containing any part of a metropolitan area, projects must be included in the regional emissions analysis that supported the conformity determination of the associated metropolitan TIP before they are added to the STIP.

(c) For each non-metropolitan area in the State, the STIP shall be developed in consultation with affected nonmetropolitan local officials with responsibility for transportation using the State's consultation process(es) established under § 450.210.

(d) For each area of the State under the jurisdiction of an Indian Tribal government, the STIP shall be developed in consultation with the Tribal government and the Secretary of the Interior.

(e) Federal Lands Highway program TIPs shall be included without change in the STIP, directly or by reference, once approved by the FHWA pursuant to 23 U.S.C. 204(a) or (j).

(f) The Governor shall provide all interested parties with a reasonable opportunity to comment on the proposed STIP as required by § 450.210(a).

(g) The STIP shall include capital and non-capital surface transportation projects (or phases of projects) within the boundaries of the State proposed for funding under title 23 U.S.C. and title 49 U.S.C. Chapter 53 (including transportation enhancements; Federal Lands Highway program projects; safety projects included in the State's Strategic Highway Safety Plan; trails projects; pedestrian walkways; and bicycle facilities), except the following that may (but are not required to) be included: (1) Safety projects funded under 23 U.S.C. 402 and 49 U.S.C. 31102; (2) Metropolitan planning projects funded under 23 U.S.C. 104(f), 49 U.S.C. 5305(d), and 49 U.S.C. 5339; (3) State planning and research projects funded under 23 U.S.C. 505 and 49 U.S.C. 5305(e); (4) At the State's discretion, State planning and research projects funded with National Highway System, Surface Transportation Program, and/or Equity Bonus funds; (5) Emergency relief projects (except those involving substantial functional, locational, or capacity changes); (6) National planning and research projects funded under 49 U.S.C. 5314; and (7) Project management oversight projects funded under 49 U.S.C. 5327.

(h) The STIP shall contain all regionally significant projects requiring an action by the FHWA or the FTA whether or not the projects are to be funded with 23 U.S.C. Chapters 1 and 2 or title 49 U.S.C. Chapter 53 funds (e.g., addition of an interchange to the Interstate System with State, local, and/or private funds, and congressionally designated projects not funded under title 23 U.S.C. or title 49 U.S.C. Chapter 53). For informational and conformity purposes, the STIP shall include (if appropriate and included in any TIPs) all regionally significant projects proposed to be funded with Federal funds other than those administered by responsibility for transportation using the FHWA or the FTA, as well as all regionally significant projects to be funded with non-Federal funds.

(i) The STIP shall include for each project or phase (e.g., preliminary engineering, environment/NEPA, right-of-way, design, or construction) the following: (1) Sufficient descriptive material (i.e., type of work, termini, and length) to identify the project or phase; (2) Estimated total project cost, or a project cost range, which may extend beyond the four years of the STIP; (3) The amount of Federal funds proposed to be obligated during each program year (for the first year, this includes the proposed category of Federal funds and source(s) of non-Federal funds. For the second, third, and fourth years, this includes the likely category or possible categories of Federal funds and sources of non-Federal funds); and (4) Identification of the agencies responsible for carrying out the project or phase.

(j) Projects that are not considered to be of appropriate scale for individual identification in a given program year may be grouped by function, work type, and/or geographic area using the applicable classifications under 23 CFR 771.117(c) and (d) and/or 40 CFR part 93. In nonattainment and maintenance areas, project classifications must be consistent with the “exempt project” classifications contained in the EPA’s transportation conformity regulation (40 CFR part 93). In addition, projects proposed for funding under title 23 U.S.C. Chapter 2 that are not regionally significant may be grouped in one line item or identified individually in the STIP.

(k) Each project or project phase included in the STIP shall be consistent with the long-range statewide transportation plan developed under § 450.214 and, in metropolitan planning areas, consistent with an approved metropolitan transportation plan developed under § 450.322.

(l) The STIP may include a financial plan that demonstrates how the approved STIP can be implemented, indicates resources from public and private sources that are reasonably expected to be made available to carry out the STIP, and recommends any additional financing strategies for needed projects and programs. In addition, for illustrative purposes, the financial plan may (but is not required to) include additional projects that would be included in the adopted STIP if reasonable additional resources beyond those identified in the financial plan were to become available. The State is not required to select any project from the illustrative list for implementation, and projects on the illustrative list cannot be advanced to implementation without an action by the FHWA and the FTA on the STIP. Starting December 11, 2007, revenue and cost estimates for the STIP must use an inflation rate(s) to reflect “year of expenditure dollars,” based on reasonable financial principles and information, developed cooperatively by the State, MPOs, and public transportation operators.

(m) The STIP shall include a project, or an identified phase of a project, only if full funding can reasonably be anticipated to be available for the project within the time period contemplated for completion of the project. In nonattainment and maintenance areas, projects included in the first two years of the STIP shall be limited to those for which funds are available or committed. Financial constraint of the STIP shall be demonstrated and maintained by year and shall include sufficient financial information to demonstrate which projects are to be implemented using current and/or reasonably available revenues, while federally supported facilities are being adequately operated and maintained. In the case of proposed funding sources, strategies for ensuring their availability shall be identified in the financial plan consistent with paragraph (l) of this section. For purposes of transportation operations and maintenance, the STIP shall include financial information containing system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain Federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53).

(n) Projects in any of the first four years of the STIP may be advanced in place of another project in the first four years of the STIP, subject to the project selection requirements of § 450.220. In addition, the STIP may be revised at any time under procedures agreed to by the State, MPO(s), and public transportation operator(s) consistent with the STIP development procedures established in this section, as well as the procedures for participation by interested parties (see § 450.210(a)), subject to FHWA/FTA approval (see § 450.218). Changes that affect fiscal constraint must take place by amendment of the STIP.

(o) In cases that the FHWA and the FTA find a STIP to be fiscally constrained and a revenue source is subsequently removed or substantially reduced (i.e., by legislative or administrative actions), the FHWA and the FTA will not withdraw the original determination of fiscal constraint. However, in such cases, the FHWA and the FTA will not act on an updated or amended STIP that does not reflect the changed revenue situation.

§ 450.322 Development and content of the metropolitan transportation plan.

(a) The metropolitan transportation planning process shall include the development of a transportation plan addressing no less than a 20-year planning horizon as of the effective date. In nonattainment and maintenance areas, the effective date of the transportation plan shall be the date of a conformity determination issued by the FHWA and the FTA. In attainment areas, the effective date of the transportation plan shall be its date of adoption by the MPO. (b) The transportation plan shall include both long-range and short-range strategies/actions that lead to the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand. (c) The MPO shall review and update the transportation plan at least every four years in air quality nonattainment and maintenance areas and at least every five years in attainment areas to confirm the transportation plan’s validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period to at least a 20-year planning horizon. In addition, the MPO may revise the transportation plan at any time using the procedures in this section without a requirement to extend the horizon year. The transportation plan (and any revisions) shall be approved by the MPO and submitted for information purposes to the Governor. Copies of any updated or revised transportation plans must be provided to the FHWA and the FTA.

(d) In metropolitan areas that are in nonattainment for ozone or carbon monoxide, the MPO shall coordinate the development of the metropolitan transportation plan with the process for developing transportation control measures (TCMs) in a State Implementation Plan (SIP).

(e) The MPO, the State(s), and the public transportation operator(s) shall validate data utilized in preparing other existing modal plans for providing input to the transportation plan. In updating the transportation plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. The MPO shall approve transportation plan contents and supporting analyses produced by a transportation plan update.

(f) The metropolitan transportation plan shall, at a minimum, include: (1) The projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan; (2) Existing and proposed transportation facilities (including major roadways, transit, multimodal and intermodal facilities, pedestrian walkways and bicycle facilities, and intermodal connectors) that should function as an integrated metropolitan transportation system, giving emphasis to those facilities that serve important national and regional transportation functions over the period of the transportation plan. In addition, the locally preferred alternative selected from an Alternatives Analysis under the FTA's Capital Investment Grant program (49 U.S.C. 5309 and 49 CFR part 611) needs to be adopted as part of the metropolitan transportation plan as a condition for funding under 49 U.S.C. 5309; (3) Operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods; (4) Consideration of the results of the congestion management process in TMAs that meet the requirements of this subpart, including the identification of SOV projects that result from a congestion management process in TMAs that are nonattainment for ozone or carbon monoxide; (5) Assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation multimodal capacity increases based on regional priorities and needs. The metropolitan transportation plan may consider projects and strategies that address areas or corridors where current or projected congestion threatens the efficient functioning of key elements of the metropolitan area's transportation system; (6) Design concept and design scope descriptions of all existing and proposed transportation facilities in sufficient detail, regardless of funding source, in nonattainment and maintenance areas for conformity determinations under the EPA's transportation conformity rule (40 CFR part 93). In all areas (regardless of air quality designation), all proposed improvements shall be described in sufficient detail to develop cost estimates; (7) A discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than at the project level. The discussion shall be developed in consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable timeframes for performing this consultation; (8) Pedestrian walkway and bicycle transportation facilities in accordance with 23 U.S.C. 217(g); (9) Transportation and transit enhancement activities, as appropriate; and (10) A financial plan that demonstrates how the adopted transportation plan can be implemented. (i) For purposes of transportation system operations and maintenance, the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain Federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53). (ii) For the purpose of developing the metropolitan transportation plan, the MPO, public transportation operator(s), and State shall cooperatively develop estimates of funds that will be available to support metropolitan transportation plan implementation, as required under § 450.314(a). All necessary financial resources from public and private sources that are reasonably expected to be made available to carry out the transportation plan shall be identified. (iii) The financial plan shall include recommendations on any additional financing strategies to fund projects and programs included in the metropolitan transportation plan. In the case of new funding sources, strategies for ensuring their availability shall be identified. (iv) In developing the financial plan, the MPO shall take into account all projects and strategies proposed for funding under title 23 U.S.C., title 49 U.S.C. Chapter 53 or with other Federal funds; State assistance; local sources; and private participation. Starting December 11, 2007, revenue and cost estimates that support the metropolitan transportation plan must use an inflation rate(s) to reflect "year of expenditure dollars," based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s). (v) For the outer years of the metropolitan transportation plan (i.e., beyond the first 10 years), the financial plan may reflect aggregate cost ranges/ cost bands, as long as the future funding source(s) is reasonably expected to be available to support the projected cost ranges/cost bands. (vi) For nonattainment and maintenance areas, the financial plan shall address the specific financial strategies required to ensure the implementation of TCMs in the applicable SIP. (vii) For illustrative purposes, the financial plan may (but is not required to) include additional projects that would be included in the adopted transportation plan if additional resources beyond those identified in the financial plan were to become available. (viii) In cases that the FHWA and the FTA find a metropolitan transportation plan to be fiscally constrained and a revenue source is subsequently removed or substantially reduced (i.e., by legislative or administrative actions), the FHWA and the FTA will not withdraw the original determination of fiscal constraint; however, in such cases, the FHWA and the FTA will not act on an updated or amended metropolitan transportation plan that does not reflect the changed revenue situation.

(g) The MPO shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan. The consultation shall involve, as appropriate: (1) Comparison of transportation plans with State conservation plans or maps, if available; or (2) Comparison of transportation plans to inventories of natural or historic resources, if available. (h) The metropolitan transportation plan should include a safety element that incorporates or summarizes the priorities, goals, countermeasures, or projects for the MPA contained in the Strategic Highway Safety Plan required under 23 U.S.C. 148, as well as (as appropriate) emergency relief and disaster preparedness plans and strategies and policies that support homeland security (as appropriate) and safeguard the personal security of all motorized and non-motorized users. (i) The MPO shall provide citizens, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with a reasonable opportunity to comment on the transportation plan using the participation plan developed under § 450.316(a). (j) The metropolitan transportation plan shall be published or otherwise made readily available by the MPO for public review, including (to the maximum extent practicable) in electronically accessible formats and means, such as the World Wide Web. (k) A State or MPO shall not be required to select any project from the illustrative list of additional projects included in the financial plan under paragraph (f)(10) of this section. (l) In nonattainment and maintenance areas for transportation-related pollutants, the MPO, as well as the FHWA and the FTA, must make a conformity determination on any updated or amended transportation plan in accordance with the Clean Air Act and the EPA transportation conformity regulations (40 CFR part 93). During a conformity lapse, MPOs can prepare an interim metropolitan transportation plan as a basis for advancing projects that are eligible to proceed under a conformity lapse. An interim metropolitan transportation plan consisting of eligible projects from, or consistent with, the most recent conforming transportation plan and TIP may proceed immediately without revisiting the requirements of this section, subject to interagency consultation defined in 40 CFR part 93. An interim metropolitan transportation plan containing eligible projects that are not from, or consistent with, the most recent conforming transportation plan and TIP must meet all the requirements of this section.

§ 450.324 Development and content of the transportation improvement program (TIP).

(a) The MPO, in cooperation with the State(s) and any affected public transportation operator(s), shall develop a TIP for the metropolitan planning area. The TIP shall cover a period of no less than four years, be updated at least every four years, and be approved by the MPO and the Governor. However, if the TIP covers more than four years, the FHWA and the FTA will consider the projects in the additional years as informational. The TIP may be updated more frequently, but the cycle for updating the TIP must be compatible with the STIP development and approval process. The TIP expires when the FHWA/FTA approval of the STIP expires. Copies of any updated or revised TIPs must be provided to the FHWA and the FTA. In nonattainment and maintenance areas subject to transportation conformity requirements, the FHWA and the FTA, as well as the MPO, must make a conformity determination on any updated or amended TIP, in accordance with the Clean Air Act requirements and the EPA's transportation conformity regulations (40 CFR part 93).

(b) The MPO shall provide all interested parties with a reasonable opportunity to comment on the proposed TIP as required by § 450.316(a). In addition, in nonattainment area TMAs, the MPO shall provide at least one formal public meeting during the TIP development process, which should be addressed through the participation plan described in § 450.316(a). In addition, the TIP shall be published or otherwise made readily available by the MPO for public review, including (to the maximum extent practicable) in electronically accessible formats and means, such as the World Wide Web, as described in § 450.316(a).

(c) The TIP shall include capital and non-capital surface transportation projects (or phases of projects) within the boundaries of the metropolitan planning area proposed for funding under 23 U.S.C. and 49 U.S.C. Chapter 53 (including transportation enhancements; Federal Lands Highway program projects; safety projects included in the State's Strategic Highway Safety Plan; trails projects; pedestrian walkways; and bicycle facilities), except the following that may (but are not required to) be included: (1) Safety projects funded under 23 U.S.C. 402 and 49 U.S.C. 31102; (2) Metropolitan planning projects funded under 23 U.S.C. 104(f), 49 U.S.C. 5305(d), and 49 U.S.C. 5339; (3) State planning and research projects funded under 23 U.S.C. 505 and 49 U.S.C. 5305(e); (4) At the discretion of the State and MPO, State planning and research projects funded with National Highway System, Surface Transportation Program, and/or Equity Bonus funds; (5) Emergency relief projects (except those involving substantial functional, locational, or capacity changes); (6) National planning and research projects funded under 49 U.S.C. 5314; and (7) Project management oversight projects funded under 49 U.S.C. 5327.

(d) The TIP shall contain all regionally significant projects requiring an action by the FHWA or the FTA whether or not the projects are to be funded under title 23 U.S.C. Chapters 1 and 2 or title 49 U.S.C. Chapter 53 (e.g., addition of an interchange to the Interstate System with State, local, and/ or private funds and congressionally designated projects not funded under 23 U.S.C. or 49 U.S.C. Chapter 53). For public information and conformity purposes, the TIP shall

include all regionally significant projects proposed to be funded with Federal funds other than those administered by the FHWA or the FTA, as well as all regionally significant projects to be funded with non-Federal funds.

(e) The TIP shall include, for each project or phase (e.g., preliminary engineering, environment/NEPA, right-of-way, design, or construction), the following: (1) Sufficient descriptive material (i.e., type of work, termini, and length) to identify the project or phase; (2) Estimated total project cost, which may extend beyond the four years of the TIP; (3) The amount of Federal funds proposed to be obligated during each program year for the project or phase (for the first year, this includes the proposed category of Federal funds and source(s) of non-Federal funds. For the second, third, and fourth years, this includes the likely category or possible categories of Federal funds and sources of non-Federal funds); (4) Identification of the agencies responsible for carrying out the project or phase; (5) In nonattainment and maintenance areas, identification of those projects which are identified as TCMs in the applicable SIP; (6) In nonattainment and maintenance areas, included projects shall be specified in sufficient detail (design concept and scope) for air quality analysis in accordance with the EPA transportation conformity regulation (40 CFR part 93); and (7) In areas with Americans with Disabilities Act required paratransit and key station plans, identification of those projects that will implement these plans.

(f) Projects that are not considered to be of appropriate scale for individual identification in a given program year may be grouped by function, work type, and/or geographic area using the applicable classifications under 23 CFR 771.117(c) and (d) and/or 40 CFR part 93. In nonattainment and maintenance areas, project classifications must be consistent with the "exempt project" classifications contained in the EPA transportation conformity regulation (40 CFR part 93). In addition, projects proposed for funding under title 23 U.S.C. Chapter 2 that are not regionally significant may be grouped in one line item or identified individually in the TIP.

(g) Each project or project phase included in the TIP shall be consistent with the approved metropolitan transportation plan.

(h) The TIP shall include a financial plan that demonstrates how the approved TIP can be implemented, indicates resources from public and private sources that are reasonably expected to be made available to carry out the TIP, and recommends any additional financing strategies for needed projects and programs. In developing the TIP, the MPO, State(s), and public transportation operator(s) shall cooperatively develop estimates of funds that are reasonably expected to be available to support TIP implementation, in accordance with § 450.314(a). Only projects for which construction or operating funds can reasonably be expected to be available may be included. In the case of new funding sources, strategies for ensuring their availability shall be identified. In developing the financial plan, the MPO shall take into account all projects and strategies funded under title 23 U.S.C., title 49 U.S.C. Chapter 53 and other Federal funds; and regionally significant projects that are not federally funded. For purposes of transportation operations and maintenance, the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain Federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53). In addition, for illustrative purposes, the financial plan may (but is not required to) include additional projects that would be included in the TIP if reasonable additional resources beyond those identified in the financial plan were to become available. Starting [Insert date 270 days after effective date], revenue and cost estimates for the TIP must use an inflation rate(s) to reflect "year of expenditure dollars," based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s).

(i) The TIP shall include a project, or a phase of a project, only if full funding can reasonably be anticipated to be available for the project within the time period contemplated for completion of the project. In nonattainment and maintenance areas, projects included in the first two years of the TIP shall be limited to those for which funds are available or committed. For the TIP, financial constraint shall be demonstrated and maintained by year and shall include sufficient financial information to demonstrate which projects are to be implemented using current and/or reasonably available revenues, while federally supported facilities are being adequately operated and maintained. In the case of proposed funding sources, strategies for ensuring their availability shall be identified in the financial plan consistent with paragraph (h) of this section. In nonattainment and maintenance areas, the TIP shall give priority to eligible TCMs identified in the approved SIP in accordance with the EPA transportation conformity regulation (40 CFR part 93) and shall provide for their timely implementation.

(j) Procedures or agreements that distribute sub-allocated Surface Transportation Program funds or funds under 49 U.S.C. 5307 to individual jurisdictions or modes within the MPA by pre-determined percentages or formulas are inconsistent with the legislative provisions that require the MPO, in cooperation with the State and the public transportation operator, to develop a prioritized and financially constrained TIP and shall not be used unless they can be clearly shown to be based on considerations required to be addressed as part of the metropolitan transportation planning process.

(k) For the purpose of including projects funded under 49 U.S.C. 5309 in a TIP, the following approach shall be followed: (1) The total Federal share of projects included in the first year of the TIP shall not exceed levels of funding committed to the MPA; and (2) The total Federal share of projects included in the second, third, fourth, and/or

subsequent years of the TIP may not exceed levels of funding committed, or reasonably expected to be available, to the MPA.

(l) As a management tool for monitoring progress in implementing the transportation plan, the TIP should: (1) Identify the criteria and process for prioritizing implementation of transportation plan elements (including multimodal trade-offs) for inclusion in the TIP and any changes in priorities from previous TIPs; (2) List major projects from the previous TIP that were implemented and identify any significant delays in the planned implementation of major projects; and (3) In nonattainment and maintenance areas, describe the progress in implementing any required TCMs, in accordance with 40 CFR part 93.

(m) During a conformity lapse, MPOs may prepare an interim TIP as a basis for advancing projects that are eligible to proceed under a conformity lapse. An interim TIP consisting of eligible projects from, or consistent with, the most recent conforming metropolitan transportation plan and TIP may proceed immediately without revisiting the requirements of this section, subject to interagency consultation defined in 40 CFR part 93. An interim TIP containing eligible projects that are not from, or consistent with, the most recent conforming transportation plan and TIP must meet all the requirements of this section.

(n) Projects in any of the first four years of the TIP may be advanced in place of another project in the first four years of the TIP, subject to the project selection requirements of § 450.330. In addition, the TIP may be revised at any time under procedures agreed to by the State, MPO(s), and public transportation operator(s) consistent with the TIP development procedures established in this section, as well as the procedures for the MPO participation plan (see § 450.316(a)) and FHWA/FTA actions on the TIP (see § 450.328).

(o) In cases that the FHWA and the FTA find a TIP to be fiscally constrained and a revenue source is subsequently removed or substantially reduced (i.e., by legislative or administrative actions), the FHWA and the FTA will not withdraw the original determination of fiscal constraint. However, in such cases, the FHWA and the FTA will not act on an updated or amended TIP that does not reflect the changed revenue situation.

§ 450.326 TIP revisions and relationship to the STIP.

(a) An MPO may revise the TIP at any time under procedures agreed to by the cooperating parties consistent with the procedures established in this part for its development and approval. In nonattainment or maintenance areas for transportation-related pollutants, if a TIP amendment involves non-exempt projects (per 40 CFR part 93), or is replaced with an updated TIP, the MPO and the FHWA and the FTA must make a new conformity determination. In all areas, changes that affect fiscal constraint must take place by amendment of the TIP. Public participation procedures consistent with § 450.316(a) shall be utilized in revising the TIP, except that these procedures are not required for administrative modifications.

(b) After approval by the MPO and the Governor, the TIP shall be included without change, directly or by reference, in the STIP required under 23 U.S.C. 135. In nonattainment and maintenance areas, a conformity finding on the TIP must be made by the FHWA and the FTA before it is included in the STIP. A copy of the approved TIP shall be provided to the FHWA and the FTA. (c) The State shall notify the MPO and Federal land management agencies when a TIP including projects under the jurisdiction of these agencies has been included in the STIP.