



GTC TIP Management Enhancement Study

Final Report

Results in Brief and Recommendations

Prepared by
Wilbur Smith Associates

July 2005



Wilbur Smith Associates
3060 Williams Drive, Suite 300
Fairfax, Virginia 22031

Table of Contents

Introduction	1
Background	1
Results in Brief	2
Key Recommendations	3
Future Study Needs	8
Appendices	9
• Technical Memorandum 1: Assessment of Existing Practices and Processes	
• Technical Memorandum 2: GTC TIP Management Issues, Related Best Practices and Recommended Actions	

Introduction

This is the final report on the Transportation Improvement Program (TIP) Management Enhancement Study, conducted on behalf of the Genesee Transportation Council in 2004 and 2005 by Wilbur Smith Associates (WSA). The report summarizes the study results and recommendations, and includes a framework for GTC implementation of the study recommendations.

Background

In 2004, the Genesee Transportation Council (GTC), the metropolitan planning organization (MPO) for the greater Rochester, New York region, initiated a TIP Management Enhancement Study. The study's purpose was to provide GTC with an improved framework for managing TIP development and tracking TIP implementation, including understanding how and why project problems arise and the means for effectively addressing them. The study's goal is to frame a manageable and credible approach the GTC and its members can use to monitor the status of TIP projects within the context of GTC's available staff, technology and financial resources.

To achieve this goal, the consultant undertook six principal tasks:

1. Examine and assess the GTC's existing TIP project development and delivery process;
2. Develop a listing of the most common and/or most significant factors that contribute to cost, scope, and schedule changes in the life of GTC TIP projects;
3. Identify "best practices" from MPOs nationwide that provide relevant options for addressing current GTC TIP problems;
4. Develop recommendations for resolving or mitigating GTC TIP problems and issues;
5. Craft a road map for implementing the approved recommendations; and
6. Identify any important factors that could not be examined within the study scope that should be addressed through follow-on activity.

The consultant documented the results of the above tasks in two technical memoranda. Technical Memorandum 1, "Assessment of Existing Practices and Processes," provided a description and process map of GTC's TIP development process as well as an assessment of TIP development process strengths, weaknesses, opportunities and threats ("SWOT" analysis). Technical Memorandum 2, "GTC TIP Management Issues, Related Best Practices and Recommended Actions," provided information collected on the nature of GTC TIP management issues in six key categories. For each category, the consultant defined the issue and provided findings related to GTC's current TIP process,

examples of “best practices” from across the nation and recommended actions GTC can take to enhance its TIP management process.

Results in Brief

- ❑ The greatest strength of GTC’s TIP process is the strong belief of TDC members that the process is fair and equitable. As a result, TDC members are committed to maintaining the process and exhibit a strong regional spirit of cooperation, openness, and collegiality. The greatest weakness of GTC’s TIP process is cost estimating inaccuracies and the lack of a means to hold members accountable for the quality of their estimates. While estimating accuracy appears to be improving and there is a general sense that project sponsors try to provide honest project cost forecasts, inconsistent estimating methodologies are used across the region. In addition, costs are infrequently revised once a project is selected.
- ❑ GTC has a major advantage over many other MPOs in that it has established a collegial and collaborative atmosphere among its members (at least at the TDC level). This positive environment can be leveraged to institutionalize elements of the TIP process that ensure project selection is fair, equitable and transparent. However, the GTC TIP development process has exposure to two major threats, including potential inter-jurisdictional tensions associated with greater competition for increasingly constrained funding and the vulnerability of the process to changes in TDC representation that alter the relationship dynamics of the group.
- ❑ Although the quality and accuracy of project scope and cost estimates submitted by project sponsors has improved considerably over the last several years, scope and cost estimating accuracy is still a concern of many TDC members and more projects come in over budget than under budget, resulting in a significant number of TIP amendments throughout the year.
- ❑ GTC has had numerous TIP amendments over the last four years, many of which were due to large project cost increases. While several large amendments did occur within programs where there is significant intra-regional competition for funds, none of the project increases were considered “new projects” and thus did not have to go through the TIP project evaluation and prioritization process. During this same period, TDC members and GTC have gained a better understanding of the long-term funding implications of large, multi-phase projects.
- ❑ Specific provisions for making future revisions to the GTC TIP development process have not been formalized and/or documented. This lack of documentation could leave GTC and the TDC vulnerable to criticism about the transparency of their practices, or even to future TIP process revisions that do not reflect the current

collaborative working relationship of the TDC (particularly if and when there is significant change in GTC staff, TDC representation or GTC membership).

- ❑ GTC currently lacks a systematic approach to monitoring the performance of its TIP in several areas, including obligations, actual project costs and schedule, and project impacts. This is primarily due to a lack of access to timely and complete access to information from project sponsors.
- ❑ TDC members are generally satisfied with GTC's current project prioritization framework. In particular, the prioritization process developed prior to the 2001-2006 TIP cycle appears to have improved the geographic distribution of funds (e.g., rural counties have done better in recent years in securing funding for bridge projects). TDC members also expressed a high level of comfort with the fairness, transparency and regional strategic focus of GTC's project prioritization.
- ❑ Two potential areas of concern are "non-traditional" projects, such as system management and operations projects, due to the uncertainty about how they will fare within the existing prioritization framework; and geographic equity issues because rural county Federal Aid roadway projects do not tend to compete well for funding given the current prioritization framework's emphasis on traffic volumes.
- ❑ GTC continues to struggle to get timely and accurate information on regional funding allocations from NYSDOT. Although the annual allocation level has been fairly predictable over the past few years, there is no guarantee this will continue in the future. Under the current protocol, GTC would have little advance notice of major changes to funding allocations that might significantly affect regional project priorities and/or the GTC's ability to include certain projects in the TIP.

Key Recommendations

Based on the results of the study, the consultant developed several recommendations for enhancing the GTC's TIP development and management process. These recommendations were grouped with six general areas:

1. Scope and Cost Estimating Consistency;
2. TIP Amendments;
3. Continuity/Succession Planning;
4. TIP Performance Monitoring;
5. Prioritization Flexibility; and
6. Accessing Timely and Detailed Financial Information.

Table ES-1 below provides a summary of the recommendations. For each recommendation, the table identifies the key parties needing to be involved in its implementation, the timeframe for implementation, whether the action is finite or continuing, and anticipated resource requirements. Technical Memorandum 2 provides details of each of the recommendations.¹

It should be noted that some of these recommendations have implications that transcend the GTC alone; rather, some may require additional institutional coordination and collaboration between all MPOs in New York State and the New York State DOT.

¹ During the course of this study, the GTC migrated its TIP data management system to an Access database.

**Table ES-1
GTC TIP Management Enhancements Study - Recommendations**

Issue Area	Recommendation	Key Involved Parties	Implementation Timing	Finite or Continuing Action?	Resource Requirements
1. Scope and Cost Estimating Consistency	A. In conjunction with NYSDOT, develop and provide a cost estimating component as part of the TIP Applicant Workshop to provide guidance on issues such as federal aid project requirements, project scoping, and use of inflation.	GTC Staff, NYSDOT HQ & Region	For 2007-2012 TIP development cycle	Continuing	GTC partnership with NYSDOT to develop & present cost estimating guidance
	B. Conduct a peer review of some or all projects likely to be selected for both cost overruns and cost underruns.	GTC Staff, TDC, NYSDOT	For 2007-2012 TIP development cycle	Continuing	Establish Peer Review Panel and ground rules for selecting projects to be reviewed
	C. Conduct a peer review of estimates of <u>new</u> projects for both cost overruns and cost underruns one to two years prior to the year in which it is programmed.	GTC Staff, TDC, NYSDOT	Begin immediately	Continuing	Establish Peer Review Panel and ground rules for selecting projects to be reviewed
	D. Strongly encourage local sponsors to make up the difference between cost estimates and actual costs with local funds or with reductions in the scope of other projects.	GTC Board, Planning Committee, TDC	Near-term	Continuing	Development of policy statement and deliberation & adoption by GTC policy-makers
2. TIP Amendments	A. Add a section to the TIP project application form that requires project sponsors to identify the full scope, cost and schedule for all anticipated project phases.	TDC, GTC Staff	For 2007-2012 TIP development cycle	Finite	Revise TIP application & instructions

**Table ES-1
GTC TIP Management Enhancements Study - Recommendations**

Issue Area	Recommendation	Key Involved Parties	Implementation Timing	Finite or Continuing Action?	Resource Requirements
	<p>B. Create a column in the TIP document that identifies the anticipated costs for project phases that will occur beyond the TIP horizon.</p>	GTC Staff	For 2007-2012 TIP development cycle	Finite	Revise TIP application & instructions
	<p>C. Track the cumulative number and value of TIP amendments for each sponsor and/or jurisdiction.</p>	GTC Staff	Initiate data collection & analysis immediately; Report annually during TIP development process; Update data annually or more frequently	Database initiation – Finite Reporting & updating – Continuing	GTC staff compiles, organizes and analyzes data as part of TIP database; Need to maintain data currency
	<p>D. Develop a policy on reasonable “triggers” for when project amendments should be reviewed or required to re-compete as new projects.</p>	TDC, Planning Committee, GTC Board	Set 2006 as target for adopting and applying a policy	Policy adoption – Finite Policy application – Continuing	Research on “trigger” options; Development of procedure for applying policy
3. Continuity & Succession Planning	<p>A. Establish a formal policy that defines the approach that will be used in the future to revise the TIP development process.</p>	TDC	By January 2006	Finite	Research and policy language development
	<p>B. Adopt this as an administrative policy through a Board resolution or other official action.</p>	Planning Committee, GTC Board	By mid-2006	Finite	Research and policy language development

**Table ES-1
GTC TIP Management Enhancements Study - Recommendations**

Issue Area	Recommendation	Key Involved Parties	Implementation Timing	Finite or Continuing Action?	Resource Requirements
4. TIP Performance Monitoring	<p>A. Work directly with the NYSDOT Regional Office to develop a protocol for obtaining an annual report on the federal funds obligated for each project in the TIP.</p> <p>B. As part of or separately from the obligations report, consider developing and publicly distributing an annual report on the actual implementation status of all, or at least regionally-significant, projects in the TIP.</p>	<p>GTC Staff, NYSDOT Region & HQ</p> <p>GTC Staff, Project Sponsors</p>	<p>Begin effort immediately; Once protocol established, produce report annually.</p> <p>2006</p>	<p>Establish protocol – Finite</p> <p>Annual report – Continuing</p> <p>Continuing</p>	<p>NYSDOT Regional Office or HQ should be able to provide with minimal effort</p> <p>Collection and analysis of project status data</p>
5. Prioritization Flexibility	<p>No specific recommendations</p>	<p>--</p>	<p>--</p>	<p>--</p>	<p>--</p>
6. Accessing Timely and Detailed Financial Information	<p>A. Work with the NYSDOT Regional Office to improve the timeliness and level of detail of revenue allocation information.</p>	<p>GTC Staff, TDC, NYSDOT Region</p>	<p>initiate immediately</p>	<p>Continuing</p>	<p>Potential to develop new protocol for NYSDOT-MPO cooperative revenue forecasting for all MPOs (NYSMPO Assoc.)</p>

Future Study Needs

As the transportation industry evolves from a focus on capacity expansion and system preservation to an emphasis on system management, operations and maintenance, it is not clear how well projects such as operational improvements, basic maintenance and other non-traditional projects will fare within the GTC's existing prioritization framework. Therefore, the GTC should both monitor this issue and consider undertaking research to develop an updated TIP project prioritization framework that can adequately assess and rank these types of projects in a useful and equitable manner.

The GTC should also study, perhaps in concert with other MPOs in New York State, options and opportunities for using more computer and Internet-based sources of data for managing and updating project and financial information in and associated with the TIP. The NYSMPO Association's 2003 report on the *Application of Advanced Technologies for Transportation Planning* highlighted several paths through which agencies in New York State (local, regional and state) could more effectively and efficiently share transportation-related data through better use of modern communications technology.

Appendices

Technical Memorandum 1: Assessment of Existing Practices and Processes

Technical Memorandum 2: GTC TIP Management Issues, Related Best Practices and Recommended Actions



GTC TIP Management Enhancement Study

Technical Memorandum 1

Task 2 Results: Assessment of Existing Practices and Processes

Prepared by
Wilbur Smith Associates

August 2004



Background and Purpose

In 2004, the Genesee Transportation Council (GTC), the metropolitan planning organization (MPO) for the greater Rochester, New York region, initiated a Transportation Improvement Program (TIP) Management Enhancement Study. The study's purpose is to provide GTC with an improved framework for managing TIP development and tracking TIP implementation. A key study objective is to understand how and why project problems arise and create a means for effectively addressing them. The final product will be a system the GTC and its members can use to monitor the status of TIP projects within the context of GTC's available staff, technology and financial resources.

Task 2 Results

The initial intent of **Task 2: Assess Existing Practices and Processes** was to examine GTC's TIP development process and identify factors that cause project cost, scope and schedule changes. Over the course of the project, however (and in consultation with GTC staff and the project steering committee), the research emphasis evolved into a broader assessment of issues associated with the GTC's TIP development process. This memorandum summarizes the findings from this effort and includes the following elements:

1. A description and process map of GTC's TIP development process; and
2. An assessment of TIP development process strengths, weaknesses, opportunities and threats ("SWOT" analysis).

TIP Development Process

In 2000, the GTC completed a major revision of its TIP development process – the process used to allocate scarce funding resources for transportation projects in the GTC planning area.¹ The core of this revision was the creation of clearly defined project selection criteria and an established timeline for TIP development and approval. The GTC adopted the first TIP (for 2001-2006) developed under this revised process, in May 2001.

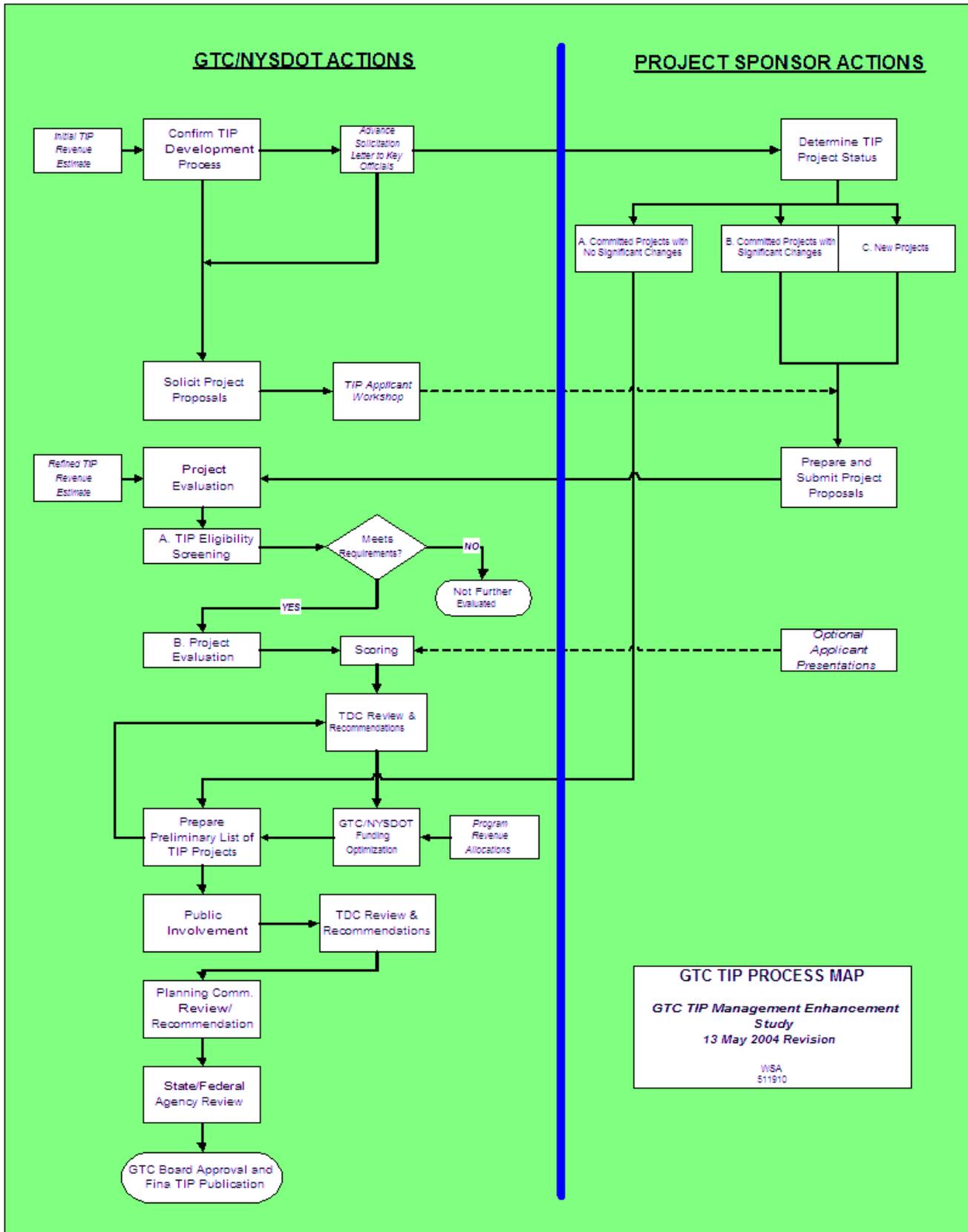
The GTC has now successfully completed two TIP cycles using the new TIP development process (a 2003-2008 TIP was completed using the development process as well). As depicted in **Figure 1**, major steps in the TIP development process include the following:

1. **Process Preparation** – Between August and September, GTC staff develop an initial revenue estimate based on input from NYSDOT and analysis of historical funding patterns. The GTC TIP Development Committee (TDC) reviews the TIP process/criteria and makes any needed adjustments, and GTC staff distributes an

¹ The GTC planning area encompasses the nine-county Genesee-Finger Lakes region, which includes the Rochester Transportation Management Area (TMA) (Monroe County and adjacent developed areas of Livingston, Ontario and Wayne Counties) and the non-TMA counties of Genesee, Livingston, Ontario, Orleans, Seneca, Wayne, Wyoming and Yates.

- advance project solicitation letter to GTC members. In response to the advance solicitation, project sponsors determine the status of projects in the existing TIP and identify potential new projects.
2. **Project Proposal Solicitation** – In September, GTC staff formally solicits proposals for projects to be included in the new TIP through a “Call for Projects” and conducts a TIP application workshop. Project sponsors prepare and submit project proposals by the end of October.
 3. **Project Screening and Evaluation** – In November and December, GTC staff develops refined revenue estimates based on any new input from NYSDOT and reviews project applications. The review includes an eligibility screening and quantitative evaluation/scoring using TIP project selection criteria (projects sponsors have the option of making presentations to support their applications). The TDC then reviews the scoring results and develops a recommended TIP.
 4. **Draft TIP** – In January/February, GTC staff typically receives information on program-specific funding allocation levels and works with NYSDOT to prepare a preliminary list of Projects (i.e., a Draft TIP).
 5. **Public Review** – From March to April, the Draft TIP is made available for public review and comment. By the end of April, the TDC reviews public comments and makes any appropriate changes to the Draft TIP document.
 6. **Review and Approval** – From April through May, the Draft TIP is submitted to the GTC Planning Committee for review and approval, after which it is submitted to NYSDOT and FHWA for review. Upon receiving NYSDOT and FHWA’s concurrence with the Draft TIP’s content, the GTC Board moves to adopt the TIP. Once adopted by the GTC Board, the TIP is considered a final document and published.

Figure 1: Overview of GTC TIP Development Process



SWOT Analysis

The consultant team conducted an independent process analysis and interviewed several GTC members to identify strengths, weaknesses, opportunities and threats (SWOT) associated with GTC's TIP development process. The findings of this analysis, summarized in **Table 1**, are discussed below:

Strengths

The greatest strength of GTC's TIP process is the strong belief of TDC members that the process is fair and equitable. As a result, TDC members are committed to maintaining the process and exhibit a strong regional spirit of cooperation, openness, and collegiality. Other strengths include:

- **Objectivity** – Project application, ranking, and selection processes are viewed as transparent, merit-based, and reasonable.
- **Collaboration** – Process elements, such as TIP selection criteria, were developed through an open, collaborative process between GTC staff and TMA /non-TMA TDC Members.
- **Battle-tested** – The process has held up through two TIP development cycles, in challenging budget times, with only minor process changes.
- **Balanced** – The process recognizes the importance of a rational balance in meeting urban-rural transportation priorities.
- **Self-policing** – Informal peer pressure keeps members honest about project costs/schedules and promotes compromise.
- **Improved Relationships** – NYSDOT Region 4 staff is recognized and appreciated for their strong commitment to working with GTC staff and TDC members in close collaboration. Additionally, rural counties/areas feel there has been a significant improvement in the equity and transparency of the TIP process.
- **Planning-Programming Linkage** – Project selection criteria map well to LRP goals (e.g., a variety of needs, such as bike/pedestrian facility investment, are addressed).

Table 1
Genesee Transportation Council – TIP Management Enhancement Study
“SWOT” Analysis of Current TIP Process

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> ● Ownership – TDC members have buy-in/ownership of process. ● Environment – Process has led to a regional spirit of cooperation, openness, and collegiality. ● Objectivity – Project application, ranking, and selection processes are viewed as transparent, merit-based, and reasonable. ● Collaboration – Process elements, such as TIP selection criteria, were developed through an open, collaborative process between GTC staff and TMA /non-TMA TDC Members. ● Battle-tested – Process has held up through two TIP development cycles, in challenging budget times, with only minor process changes. ● Balanced – Process recognizes importance of a rational balance in meeting urban-rural transportation priorities. ● Self-policing – Informal peer pressure keeps members honest about project costs/schedules and promotes compromise. ● Improved Relationships – NYSDOT Region 4 staff is recognized and appreciated for their strong commitment to work with GTC staff and TDC members. Additionally, rural counties/areas feel there has been a significant improvement in the TIP process. ● Planning-Programming Linkage – Project selection criteria map well to LRP goals (e.g., a variety of needs, such as bike/pep facility investment, are addressed). 	<ul style="list-style-type: none"> ● Future Commitments – TIP process does not facilitate consideration of total costs for projects that will have subsequent phases and thus create funding commitments beyond the TIP planning horizon. ● Selection Criteria Revision Process – Process and timing for future revisions to project selection criteria are not documented. ● Cost Estimating: <ul style="list-style-type: none"> – GTC cost estimating guidance is inconsistently followed. – Project cost estimates are rarely updated, even when significant cost increase/scope creep is known or expected. – Not clear how inflation is handled in cost estimates. – Increased cost implications of using Federal funding is not fully understood. ● Accountability – No process exists for monitoring TIP performance (e.g., estimated vs. actual project costs/schedules). ● One-size-fits-all – Quantitative approach to project selection (i.e., reliance on project scoring) may penalize projects that offer significant, but subjective benefits (e.g. rest area, ITS, operations). ● Information – Program-level detail about NYSDOT funding is late in coming. ● Project Definition – No established threshold for when an “add-on” becomes a separate project that needs to go through the ranking process. ● Sufficiency – Federal project obligation tracking and reporting requirements are not being met.
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> ● Process Validation – The TIP Management Enhancement Study will objectively evaluate the merits of the current TIP process. ● New Leadership – Recent GTC staff changes provide an opportunity to strengthen and institutionalize the TIP process by proving its adaptability under different management/leadership styles. ● NYSDOT Transformation – The Department’s change initiative may provide new opportunities to address concerns and issues. ● NYSDOT Corridor Focus – Early status of this initiative may enable GTC to help shape this initiative, such as how its implementation would be incorporated into the TIP development process. 	<ul style="list-style-type: none"> ● Succession/Continuity – Viability of the TIP process is reliant on the spirit of cooperation and collegiality; this makes it vulnerable to relationship dynamics. ● Upcoming Budget Squeeze – State and federal funding reductions are likely to trickle down to the regional level, increasing the challenge of balancing the distribution of funds. ● Upcoming Mega-projects – Upcoming large projects may limit the amount of funding available for other regional priorities. ● Maintaining Trust – Issues that could erode the level of trust between GTC members include fears that colleagues will “low-ball” estimates, uncertainty about how NYSDOT makes decision about individual program funding allocation levels, and perceptions that GTC’s organizational relationship to R-GRTA may influence GTC staff objectivity. ● NYSDOT Transformation – Little is known about the focus of the initiative and its potential implications for MPOs.

Weaknesses

The greatest weakness of GTC's TIP process is cost estimating inaccuracies and the lack of a means to hold members accountable for the quality of their estimates. While estimating accuracy appears to be improving and there is a general sense that project sponsors try to provide honest project cost forecasts, inconsistent estimating methodologies are used throughout the region. In addition, costs are infrequently revised once a project is selected, despite the long timeframe between project programming and construction, and the tendency for project scopes to expand over time. Other weaknesses include:

- **Future Commitments** – The TIP process does not facilitate consideration of total costs for projects that will have subsequent phases and thus include funding commitments beyond the TIP planning horizon.
- **Selection Criteria Revision Process** – The process and timing for future revisions to project selection criteria are not documented.
- **One-size-fits-all** – The quantitative approach to project selection (i.e., reliance on project scoring) may penalize projects that offer significant, but highly subjective benefits (e.g. rest area, ITS, operations).
- **Information** – Program-level detail about NYSDOT funding is late in coming.
- **Project Definition** – No established threshold exists for when an “add-on” becomes a separate project that should be considered on its own merit and/ or sufficiently changes the nature of an existing project so that it should go through the ranking process again.
- **Sufficiency** – Federal project obligation tracking and reporting requirements are not being met.

Opportunities

GTC has a major advantage over many other MPOs in that it has established a collegial and collaborative atmosphere among its members (at least at the TDC level). This positive environment can be leveraged to institutionalize elements of the TIP process that ensure project selection is fair, equitable and transparent. Other opportunities include:

- **New Leadership** – Recent GTC senior staff changes provide an opportunity to strengthen and institutionalize the TIP process by demonstrating its adaptability under different management/leadership styles.
- **NYSDOT “Transformation”** – The Department's organizational change initiative may provide new opportunities to address concerns and issues.
- **NYSDOT Corridor Focus** – Early status of this initiative may enable GTC to help shape this initiative, such as how its implementation would be incorporated into the TIP development process.

Threats

The GTC TIP development process has exposure to two major threats. The first threat is financial – state and federal funding reductions are likely to trickle down to the regional level and upcoming large projects could use much of the available funding. If not adequately

addressed, tensions associated with greater competition for funding could erode the collaborative spirit of the TDC. The second major threat deals with succession and continuity. Because the current success of the TIP process is highly influenced by the spirit of cooperation and collegiality within the TDC, the process is vulnerable to changes in TDC representation that alter the relationship dynamics of the group.

Conclusion and Next Steps

Based on the work conducted in Task 2, the GTC's TIP development process appears to be functioning adequately and to the general satisfaction of TDC members. In general, the weaknesses and threats identified above are typical of the issues and challenges faced by many MPOs across the country. Nonetheless, there are steps GTC and the TDC can take to address some or all of these issues and to ensure the continued adequacy of the TIP process. Next steps in this study include identifying MPO and state DOT "best practices" from across the country related to as many of these issues as possible and, based on these findings, develop recommended steps to address them.



GTC TIP Management Enhancement Study

Technical Memorandum 2

GTC TIP Management Issues, Related Best Practices and Recommended Actions

Prepared by
Wilbur Smith Associates

Revision 2.1
June 2005



Background and Purpose

In 2004, the Genesee Transportation Council (GTC), the metropolitan planning organization (MPO) for the greater Rochester, New York region, initiated a Transportation Improvement Program (TIP) Management Enhancement Study. The study's purpose is to provide GTC with an improved framework for managing TIP development and tracking TIP implementation. A key study objective is to understand how and why project problems arise and create a means for effectively addressing them. The final product will be an approach the GTC and its members can use to monitor the status of TIP projects within the context of GTC's available staff, technology and financial resources.

This technical memorandum summarizes information collected on the nature of GTC TIP management issues in six key areas:

1. Scope and Cost Estimating Consistency;
2. TIP Amendments;
3. Continuity/Succession Planning;
4. TIP Performance Monitoring;
5. Prioritization Flexibility; and
6. Accessing Timely and Detailed Financial Information.

For each issue area, the memorandum provides a definition of and background on the issue, findings related to GTC's current TIP process, examples of "best practices" from across the nation and recommended actions GTC can take to enhance its TIP management process.

1 Scope and Cost Estimating Consistency

1.1 Issue

Project scope and cost estimates developed by project sponsors occasionally underestimate actual project costs.

1.2 Background

Scope estimating refers to identification of the activities, and the magnitude of these activities, that will be required to complete a transportation improvement. Cost estimating includes the processes and methodologies used to predict the cost of completing the activities identified in project scoping. Together, scope and cost estimates provide the total anticipated project costs that are used by the TIP Development Committee (TDC) in evaluating projects and, if the project is selected, that are programmed into the TIP.

At best, scope and cost estimating is a combination of art and science. At the time a project is submitted for consideration in the TIP, it may be little more than a concept, with typically limited availability of technical data about considerations that can have enormous effects on project scope (e.g., utility relocation requirements, environmental mitigation needs, and context sensitive design considerations). In cases where a project includes unique challenges, predicting the full range of activities a project will include is nearly impossible until design has been completed. On the other hand, accurate cost estimates for specific project activities (e.g., moving earth, paving, etc.) are fairly easy to develop due to the wealth of historic information maintained by the New York State Department of Transportation (NYSDOT) and the other project sponsors.

Inaccurate scope and cost estimates have always been and continue to be a problem for transportation agencies. Issues that can be associated with poor and/or inaccurate estimates include the following:

- **Overprogramming** – Low scope and cost estimates, and the subsequent need for TIP amendments to fund higher actual costs, limit the funding available for new projects and/or require schedules for one or more programmed projects to slide unless additional revenues can be found to address the added costs.
- **MPO Credibility to Stakeholders/Public** – Stakeholders and the public view the TIP as a commitment by agencies to deliver a set of projects within a specified schedule and cost level. While some changes to project costs and schedule are expected, the need for excessive TIP amendments can erode

stakeholder/public confidence in both the planning process and in their assessment of GTC's ability to deliver what it promises.

- **Understanding of Federal Requirements** – Federally funded projects must be built to specific standards, which often are higher than the standards a project sponsor would typically use. Failure by a project sponsor to understand and/or incorporate the higher standards into project scopes can lead to underestimated project costs.

1.3 Findings

Project sponsors all follow a similar process for estimating project costs. Agencies maintain their own data or rely on NYSDOT for data on 'unit cost' figures, which provide the average cost of various project development and construction activities based on historical expenditure information. Agency staffs then use the unit costs to estimate the cost of projects they are proposing. The processes used to estimate project scope appear less consistent and range from "back of the envelope" estimates to efforts that include preliminary analysis of project requirements (e.g., site surveys and public input).

Based on comments from GTC staff, TDC members and NYSDOT personnel, the quality and accuracy of project scope and cost estimates submitted by project sponsors has improved considerably over the last several years. The improvements appear to be the result of three primary factors:

- A strong commitment from project sponsors to provide accurate scope and cost estimates;
- Better defined project submission requirements (by GTC); and
- Increased efforts by NYSDOT to improve its scope and cost estimates as well as to assist project sponsors in developing their own more accurate scope and cost estimates.

Despite recent improvements, scope and cost estimating accuracy is still a concern of many TDC members; and more projects come in over budget than under budget, resulting in a significant number of TIP amendments throughout the year. Specific areas where GTC could improve scope and cost estimating include the following:

- **Consistency** – Estimating practices appear to vary across the GTC region. In particular, it is not clear whether a consistent approach is used to incorporate inflation into cost estimates.
- **Revisions** – Scopes and costs are infrequently revised once a project is selected, despite the long timeframe between project programming and construction, and the tendency for project scopes to expand over time.

- **Requirements** – Project sponsors that infrequently use federal funds often have a poor understanding of additional requirements and standards, and/or fail to account for additional scope and costs associated with them.
- **Accountability** – No mechanism is in place to track changes to project costs (i.e., initial estimate plus TIP amendments) or to compare actual project costs to original estimates.

1.4 Other MPO Practices

The **Denver Regional Council of Governments (DRCOG)** has had success improving the quality and accuracy of project scope and cost estimates of member agencies by shifting the responsibility for addressing the impacts of poor cost estimates from the overall region to the individual agency sponsor and requiring in some cases that a project re-compete at the new cost level. As described by a DRCOG official:

“The project sponsor is responsible for the cost estimate (including how they estimate inflation), and applicants for DRCOG-selected projects are responsible for any project cost overruns within a TIP cycle (so all the risk for estimates that are too low is borne by the applicants).....If a sponsor does really blow it and doesn't think it can come up with the additional dollars, the sponsor has the right to come back in a new TIP cycle and submit the project as if it were an entirely new project (with the higher cost). If it scores well enough with the new cost to be selected, it then gets the extra funding. If it doesn't score well enough, the sponsor can revert to its original award and make up the difference, or it can abandon the project, repaying any federal funds it has already spent.”

DRCOG also has struggled to get local jurisdictions to understand the scope and cost implications of using federal funds for projects. To help address the issue, DRCOG now makes a concerted and consistent effort to educate its member agencies and hold them accountable for failure to incorporate the federal requirement considerations into their cost estimating efforts:

“Every time we do a TIP, we do training, including "Implementing a Federal Aid Project 101." We have put this training on for a number of years, and make it as hard, nasty, and ugly as we can, citing examples from our own experience and from our members. Our TIP application has a statement that the sponsor has reviewed the federal requirements info we provided and will "willingly" implement and adhere to any and all of it. Also, we do a peer review of certain projects that look like they are going to be selected (especially projects of sponsors who have not implemented a federal aid project in a while), and tell them all the federal stuff they are going to have to go through. We still have numerous problems, but we tend to show a lot less sympathy since we've been doing all these things. We don't bail them out with more federal funding.”

1.5 Recommendation

While the best practices discussed above are not completely applicable to GTC – in particular, project costs are not directly considered in GTC’s project evaluation/prioritization process, which limits GTC’s ability to hold project sponsors accountable for both overestimating and underestimating project costs – elements of DRCOG’s approach could be applied to improve the accuracy and consistency of cost estimating by project sponsors. **Specific recommendations include the following (these recommendations could be implemented in whole or in part):**

- **In conjunction with NYSDOT, develop and provide a cost estimating component as part of the TIP Applicant Workshop to provide guidance on issues such as federal aid project requirements, project scoping, and use of inflation;**
- **Conduct a peer review of some or all projects likely to be selected for both cost overruns and cost underruns;**
- **Conduct a peer review of estimates of new projects one to two years prior to the year in which it is programmed for both cost overruns and cost underruns; and/or**
- **Strongly encourage local sponsors to make up the difference between cost estimates and actual costs with local funds or with reductions in the scope of other projects. (Note: if offsets from other projects are favored, the peer reviews discussed above also should seek to discourage project sponsors from “high-balling” cost estimates in an effort to amass reserves that can be used to address cost overruns.) The level of “encouragement” could be based on the following considerations:**
 - **If a TIP amendment will be required;**
 - **If the project sponsor has other projects where offsets through scope reductions are viable;**
 - **Potential impacts on regional funding equity;**
 - **Nature of cost increase causes (e.g., extensive scope expansion vs. unforeseen increases in one or more unit cost category); and**
 - **Project sponsor’s history with TIP amendments due to cost overruns or underruns.**

2 TIP Amendments

2.1 Issue

The GTC TIP incurs a significant number of major project amendments throughout the course of a TIP cycle. While some of these amendments are due to the cost estimating issues discussed in the previous issues, others are due to major changes in project scope or are for additional phases of existing projects. In both cases, the amendments can result in the funding of much broader project activities than were identified at the time the original projects were submitted for TIP funding consideration.

2.2 Background

A primary purpose of a TIP is to clearly document a region's commitment to specific transportation projects for at least three years, and to identify the total reasonably expected cost of these commitments. When actual costs or subsequent estimates of project costs are different than the amount originally programmed (normally they are higher), the TIP must be amended to accommodate these changes. Depending on how state DOT allocations to a region are handled, TIP amendments can have either a direct or indirect impact on the funding available for other regional priorities:

- **Direct Impacts** – Funding for some or all TIP amendments are funded out of a region's allocation; or
- **Indirect Impacts** – A state DOT makes up the funding difference to cover some or all TIP amendments, and effectively reduces all regional allocations to ensure it holds back sufficient funds to address statewide amendment costs.

Since cost and scope estimating is not an exact science, the need for minor TIP amendments is both normal and acceptable. Large amendments, however, typically result from major changes in project scope, which can alter the nature of a project to a degree where the revised project is fundamentally different from the original project that was selected (e.g., a bridge replacement project that turns into an interchange replacement).

Multi-phase projects – large projects that are programmed and built in phases that can span several years – also can be a source of major TIP amendments. In these cases, only the costs for project phases falling within the TIP time horizon (normally 3 to 6 years) are considered when the projects are programmed, and funding for subsequent phases are addressed through TIP amendments. Thus, the initial selection of these projects for funding creates a de facto long-term commitment to fund all project phases, which may

not be known or fully understood by MPO decision-makers at the time original project funding decisions are made.

2.3 Findings

GTC has had numerous amendments to its TIP over the last four years, several of which were due to large project cost increases. While many of these amendments reflect special circumstances that did not influence the availability of funds for other regional priorities (e.g., amendments for projects that received FHWA demonstration money, FTA discretionary grants, or other special funding), several large amendments did occur within programs where there is significant intra-regional competition for funds (note: in some cases cost increase amendments are partially offset by cost reduction or project elimination replacement amendments). This included:

- **STP Flex/Urban/Safety** – Ten amendments for project costs increases of more than \$100,000 and a net total of nearly \$4.5 million;
- **HBRR** – Two amendments for project costs increases of more than \$100,000 and a net total of just over \$1.0 million;
- **Interstate Maintenance** – One amendment for \$7.8 million and a total net increase of \$4.2 million; and
- **NHS** – One amendment for \$1.7 million (no offsetting reductions).

Despite the size of many of the TIP amendments and the fact that many of the amendments were due to significant changes in the scope and nature of the originally programmed projects, none of the project increases were considered “new projects”, thus they did not have to go through the TIP project evaluation and prioritization process.

A particular concern among TDC members during the current TIP cycle was a large amendment needed to cover the cost of subsequent phases for a project that had been approved several years in the past. At the time that the original project was programmed, the project sponsor was aware that it would include multiple phases and require additional funding. GTC’s TIP development process, however, does not require agencies to identify project phases that will be implemented beyond the TIP time horizon (i.e., 5 years). As a result, the full anticipated costs of these phases were not discussed as part of the project evaluation and selection process. Due to the size of the subsequent phases for the project, the amendments effectively reduced the level of funding available to address other project needs in the region. For several TDC members, the size of the amendments and their impact on available funding came as a surprise and caused concern that the project amendments may have circumvented the TDC’s TIP project selection process.

Project sponsors should recognize the importance of identifying the full scope and cost of multiple phase projects when they are originally submitted for funding consideration, and commit to provide this information to the TDC when submitting project requests. In addition, TDC members and GTC now have a better understanding of the long-term funding implications of large, multi-phase projects. Nonetheless, GTC should take actions to institutionalize how future multi-phase projects and the associated out-year costs are identified and treated. Specifically, GTC should address three areas of consideration:

- **Project Application Process** – GTC’s current project application does not provide a formal mechanism to disclose the estimated cost of project phases that will need to be funded beyond the 5-year horizon of the TIP document.
- **Documentation Process** – The GTC TIP does not include a place to identify potential out-year costs for projects.
- **Policy** – GTC has no clear policies to define when a project amendment should compete/re-compete as a new project. GTC also lacks a policy that defines whether un-programmed project phases should be treated as project amendments or if they should compete as separate projects when they are ready for funding.

2.4 Examples

The **Mid-America Regional Council (MARC)**, the MPO for the Kansas City, Missouri metropolitan area, changed the TIP amendment process in 2002 to “*get the number and frequency of amendments under control.*” MARC staff had noted that the level of resources devoted to processing and administering TIP amendments was becoming significant because amendments were continuously being requested throughout the year. In order to impose a higher level of discipline on the TIP process and project sponsors, MARC staff, with concurrence from the MPO, the state DOT and federal agencies, initiated a new process under which the TIP is amended quarterly, with flexibility provisions for emergencies.

MARC deals with two types of TIP changes, depending on the nature of the required modification: “Amendments” and “Administrative Revisions.” Formal amendments are intended to allow for more in-depth scrutiny by staff and policy-makers of major changes to programmed projects. MARC is primarily interested in formal amendments that affect the region’s suballocated federal funds, for which MARC has primary authority to determine or select the projects that will receive federal funding.

The following is a list of considerations that will trigger a formal amendment review:

- **Air Quality Conformity** – Additions, deletions or modifications to one or more non-exempt projects for the purposes of air quality conformity are reviewed to ensure proposed changes (amendments) will not adversely affect air quality or result in further environmental review.
- **Sub-allocated Federal Funds** – Additions, deletions or modifications to one or more projects that will involve the use of sub-allocated federal funds are reviewed to ensure cost figures must be fully budgeted without adversely affecting financial constraint of the TIP.
- **Major Cost Increases** – Requested changes of 25% or more in the value of federal funds to be programmed for projects are reviewed to ensure the proposed changes do not result in more than minor scope changes. As a general rule, “minor” means that the originally stated project objectives are achieved.
- **Controversial Projects** – Additions, deletions or modifications of one or more projects deemed to be publicly controversial in nature by MARC staff or the MPO policy committee are reviewed to ensure the proposed changes are non-controversial. (Projects with significant issues must be taken through the appropriate MARC committee and Board).

Although it has yet to occur, staff said that major unanticipated changes to the cost or scope of a project funded through suballocated programs have the real potential to trigger re-review and reconsideration of the project by the TIP programming committee to determine the continued appropriateness of the project. MARC has already stepped up its scrutiny of amendments by requiring project sponsors who request major amendments to provide detailed justifications to the programming committee, which staff believes has given the revised TIP amendment process more legitimacy and usefulness.

DRCOG requires project sponsors to submit project applications that show the full funding history (i.e., previous funding), the anticipated costs for the six years covered by their TIP, and future funding (beyond their TIP horizon). In cases where project applications are only for a specific project phase of a costly project (e.g., right of way acquisition), project sponsors can choose to have their application evaluated in one of two ways: 1) evaluation can be based on the costs and benefits of the individual project phase (in which case subsequent phases must compete); or 2) the costs and benefits of the entire project are assessed (regardless of how much they are requesting in the TIP period). The default is the latter, unless the phase requested has independent utility.

2.5 Recommendation

Adapting GTC’s TIP development process to reduce the number and magnitude of TIP amendments and to better address issues associated with multi-phase projects will

require a combination of administrative and policy development actions. **The recommended administrative actions are fairly straightforward:**

- **Add a section to the TIP project application form that requires project sponsors to identify the full scope, cost and schedule for all anticipated project phases;**
- **Create a column in the TIP document that identifies the anticipated costs for project phases that will occur beyond the TIP horizon;**
- **Track the cumulative number and value of TIP amendments for each sponsor and/or jurisdiction.**

The second – and more challenging – set of recommendations will require the TDC and the GTC Policy Board to develop policies that clearly define: 1) the threshold and/or mechanisms that will determine when amendments should be treated as new projects; and 2) how future funding decisions will be made for un-programmed phases of previously approved projects.

Regarding when project amendments should be reviewed or required to re-compete as new projects, the MARC best practice discussion suggests a set of reasonable “triggers,” not all of which will necessarily be mutually exclusive:

- Adverse impact on air quality conformity;
- Adverse impact on sub-allocated federal funds;
- Major changes to project scope and/or objectives;
- Changes of 25% or more in programmed project costs that are not covered from the project sponsor’s own sources and affect TIP fiscal constraint; and/or
- Addition, deletion or modification of a publicly-controversial project (as deemed by staff, TDC or GTC Policy Committee).

It is recommended that the TDC use these as a starting point for developing policies that reflect GTC’s unique culture and situation.

Regarding approaches for addressing the funding for the subsequent project phases, two options exist for how this could be accomplished:

- Treat the cost for additional project phases as project amendments and clearly identify the source of funds for additional costs; or
- Treat the additional project phases as “new” projects that must be evaluated and prioritized as separate candidate projects.

With either approach, the result will likely be the same – the initial selection of a multi-phase project is likely to create a long-term commitment to fund all project phases (given GTC’s project evaluation criteria, it seems unlikely that a project that ranks well enough to be selected for funding would not have its later phases approved as well). With either approach, the policy should apply to both single projects being programmed through the various phases of the project development process (e.g., preliminary design, ROW, etc.) and “megaprojects” that will be built in segments (e.g., a 15-mile corridor to be built as Segment A, Segment B, etc.). The question the TDC and GTC policy committee will need to decide is which approach will provide the best process transparency and best fits the culture of GTC.

3 Continuity/Succession Planning

3.1 Issue

GTC does not have a clearly documented process that describes how future revisions to the TIP development process will be made and who will make them.

3.2 Background

By its nature, a TIP development framework (i.e., the policies and processes that determine how TIP projects are proposed, evaluated and selected) is a work in progress. In part, this is due to the desire of MPO's to continually improve the framework, but it also may be driven by evolving transportation needs, program changes due to reauthorization of the federal surface transportation act and the dynamics of MPO member relationships. Regardless of the reasons for needed changes to the TIP development framework, the process that is used to review, revise and approve the changes should be formally documented for the following reasons:

- **Preparedness** – Establishing a well defined process for revising the TIP development framework can streamline the revision process, establish expectations and avoid pitfalls that occur if the process is “made up on the fly.”
- **Transparency** – The existence of a documented process for revising the TIP development framework ensures that MPO members as well as external stakeholders have a clear understanding of how revisions will be developed and approved. This transparency is critical to building and maintaining trust among MPO members, and between the MPO and external stakeholders.
- **Continuity and Consistency** – A TIP development framework and the process used to develop and/or revise it needs to transcend individuals. By formally documenting its TIP framework revision process, an MPO can institutionalize existing policies and processes and help ensure smooth and consistent agency performance when MPO membership and leadership successions occur.

3.3 Findings

GTC conducted a major revision of its TIP development process prior to the creation of the 2001-2006 TIP, and made minor revision to the process prior to development of the 2003-2008 TIP. By most accounts, the approaches used to revise GTC's TIP process have been fair, open and well-received by members of the TDC, and the resulting changes have been well-documented in the TIP development guidance that GTC provides its member agencies. The actual approach for making future revisions to the GTC TIP development process, however, has not been formalized and/or documented, and some TDC members stated that they did not know what approach would be used to develop

and approve future TIP process revisions. This lack of documentation could leave GTC and the TDC vulnerable to criticism about the transparency of their practices, or even to future TIP process revisions that do not reflect the current collaborative working relationship of the TDC (particularly if and when there is significant change in GTC staff, TDC representation or GTC membership).

3.4 Examples

Most MPOs, including the GTC, have documented processes for revising or updating their major operating procedures, such as organizational by-laws and memoranda of understanding among MPO members.

3.5 Recommendation

GTC should establish a formal policy that defines the approach that will be used in the future to revise the TIP development process. This policy should be approved by the TDC, the Planning Committee and the GTC Policy Board and should address the following:

- Define who can request that revisions to the TIP development process be considered. This could include GTC staff, the TDC (either individual members or by committee consensus), the Planning Committee and Policy Board.

- Define the timeframe or cycle for revisions to the TIP development process. It is recommended that the revision process start one year after the Policy Board approves a final TIP (i.e., June) and continue as needed until project requests are submitted (i.e., September). Key revision process steps should include:
 1. Identification of revision needs;
 2. Development/consideration of revisions by GTC staff/TDC;
 3. Public comment (if appropriate/necessary);
 4. Finalization of revision recommendations; and
 5. Approval of revisions by the TDC, GTC Planning Committee, GTC Policy Board (as appropriate).

It may be advisable to also empower the GTC Policy Board's Executive Committee to approve interim changes to maintain as much schedule flexibility as possible.

- Define the roles of various participants based on the nature of proposed TIP process revisions:
 - **Process and Logistical Revisions** – Changes to items/activities such as schedules, forms, project submission formats (e.g., electronic), presentation requirements/opportunities, etc., could be developed by GTC staff and the TDC, and approved by either the TDC itself, or by the GTC Planning Committee. Unless an issue is particularly controversial, it should not require public review or GTC Policy Board approval.
 - **Policy Revisions** – TIP process revisions that involve policy decisions, such as changes to project selection criteria, decision-making processes, or amendment thresholds, should include a public/stakeholder comment period and will require approval by both the GTC Planning Committee and the GTC Policy Board (in addition to participation by GTC staff and the TDC).

It is further recommended that the GTC adopt this approach as an administrative policy through a Board resolution or other official action. In addition, the approved policy should be available via the GTC website and should be reiterated to GTC members prior to the beginning of each TIP development cycle.

4 TIP Performance Monitoring

4.1 Issue

GTC currently does not have a mechanism to track the status of project obligations, construction status and cost changes once a project is programmed in the TIP.

4.2 Background

The selection of projects and development of a TIP is an important initial step in the delivery of transportation projects and services – it identifies the anticipated costs and allocates appropriate levels of funding for transportation improvements, it documents expected project schedules for project completion and, in some cases, it defines the anticipated benefits of projects once they are completed. Thus, the effectiveness of an MPO's TIP process is determined by how well it predicts actual project costs, schedules and impacts.

Although there is a significant trend within the transportation industry toward greater performance monitoring, most MPOs have found tracking the effectiveness of their TIP process a difficult and challenging activity for several reasons:

- Once programmed, projects typically are implemented by other agencies and the MPO has little control over the implementation phase;
- Funding for project construction cost overruns may not need to be addressed through TIP amendments (e.g., they are covered by state DOT contingency funds);
- MPOs may not have policies, procedures and/or systems for tracking changes to project costs and schedule changes;
- Even if MPOs collect information on project cost and schedule status, implementing agencies may not have systems that can provide the needed information;
- The performance impacts of individual projects are often difficult to measure; and
- While the TEA-21 legislation requires each MPO to annually produce a report on federally-funded project obligations, these requirements are inconsistently monitored and enforced by FHWA.

Despite the challenges in monitoring TIP performance, doing so (even if through a less than perfect approach) offers MPOs several potential benefits:

- **Compliance** – To be in full compliance with federal law and guidance, GTC must publicly report the obligation status of projects in its TIP each year;
- **Accountability** – By tracking actual project costs, schedules and impacts, MPOs have the data to hold project sponsors accountable for the quality and accuracy of their project applications;
- **Process Improvement** – TIP performance data can help MPOs determine the need for revisions to their project selection criteria and TIP development processes; and
- **Strategic Direction** – Tracking TIP implementation can help MPOs monitor their progress toward achieving strategic goals and objectives embodied in their LRTPs.

4.3 Findings

GTC currently lacks a systematic approach to monitoring the performance of its TIP in the following areas:

- **Obligations** – GTC does not currently have access to information to track and report obligations for projects programmed in its TIP. Accordingly, without this information being provided, GTC is not able to satisfy a federal requirement. In addition, the lack of obligation tracking creates a barrier for GTC to ensure that TIP projects are being implemented as proposed and selected.
- **Actual Project Costs and Schedule** – GTC does not collect data on actual project costs (for TIP projects) or completion dates once the projects have been completed. This makes it difficult for GTC to evaluate the effectiveness of original TIP estimates, and limits the agency’s ability to look for trends in cost and schedule estimating errors to identify problem areas.
- **Project Impacts** – GTC typically does not assess the impacts of projects once they are completed (e.g., through before and after studies). The lack of “real” project performance data limits the ability of GTC to fully assess the effectiveness of its project evaluation and prioritization process.

4.4 Examples

At the end of each federal fiscal year, the **Wasatch Front Regional Council (WFRC)**, the MPO for the Salt Lake City region, sends information about projects in the regional TIP to Utah DOT and the regional transit agency, both of which indicate how much funding was obligated for each project. This process applies to federal funding obligations only; they do not include state or local funded projects in their TIP. The current practice has

evolved over recent years, after WFRC noticed that such a listing was a requirement of TEA-21 and initiated discussions with Utah DOT and the Utah Transit Authority (UTA). WFRC also prepares a list of obligated projects, which is presented and distributed to the Regional Council members. WFRC uses the obligations listing process to monitor implementation of TIP projects for Urban STP and CMAQ project categories and to review overall consistency with the TIP. WFRC concentrates on projects funded with STP and CMAQ funds because the MPO has the most direct focus on and control over these programs.

Since the passage of TEA-21, the **Chittenden County MPO (CCMPO)** in Burlington, Vermont, has published project-by-project information on the status of federal fund obligations for its 18-municipality region. After TEA-21's enactment, the CCMPO noted the new annual listing of obligated projects requirement and approached the Vermont Agency of Transportation (VTrans) to determine how to satisfy the new statutory requirement. Prior to TEA-21, obligation information was provided only sporadically in response to specific requests. CCMPO and VTrans determined that the best way to approach this requirement would be through the annual TIP update process.

During the annual TIP development cycle, the CCMPO transmits to VTrans a listing of projects in the prior year's TIP program element and requests the actual obligation amounts for each project. VTrans completes this form, drawing on its own and the transit operator's information, and returns it to the CCMPO. The CCMPO then communicates with VTrans to clear up any questions or discrepancies. Once all parties concur with the listing, it is included in the draft and final TIP documents for public and policy board review and approval. The agencies involved in the annual listing process are the CCMPO, which compiles and publishes the information, VTrans, which researches, assembles, and provides project obligation information to CCMPO, and the CCTA (regional transit operator), which provides FTA funding information upon request and reviews listing documents as part of the TIP development process.

During the past few years, the process has evolved to point where the CCMPO now includes project-by-project actual obligations information in a separate TIP section, which readily allows comparison of the prior year's TIP program element to the actual obligation amounts. The CCMPO believes the process works well because of good communication and cooperation with VTrans and the regional transit operator.

The **Capital District Transportation Committee (CDTC)** in Albany, NY, began to receive useful annual funds obligation information from the NYSDOT Region 1 office in 2003. CDTC staff said that prior to this, only "bits and pieces" of information were received. CDTC is currently negotiating with the Regional office on an approach to standardizing both the schedule for and content of obligation reports provided to the MPO. CDTC is particularly interested in the balances remaining in obligation authority

when updating the TIP. NYSDOT provides the obligation information to CDTC in electronic (e.g., spreadsheet) form.

CDTC staff said that the primary obstacle to obtaining the obligation data is logistical – the data often requires refinement and quality control by NYSDOT staff as well as hands-on efforts related to reconciling funding additions and subtractions that may have occurred during the past year. Because development of some of obligation data is not automated, it creates a work burden for NYSDOT that may be reconciled with other priorities. CDTC staff believes that NYSDOT needs to establish a regular schedule for providing obligation information and that this needs to be coordinated centrally by NYSDOT headquarters.

The **Metropolitan Transportation Commission (MTC)**, the MPO for the San Francisco Bay area, has developed the web-based “WebFMS.” WebFMS is short for “Web Fund Management System.” This system serves as an interface that allows the general public and MTC planning partners access to TIP project listing information, funding and status reports over the Internet. For the general public, WebFMS can be used as a tool to obtain information on specific TIP projects. Once the desired projects are found, reporting features are available to empower the user to print or save the results. Only Transit Operators, CMAs and other project sponsors are allowed to enter the WebFMS Secure Portal for editing or updating project information.

The **Atlanta Regional Commission (ARC)**, the MPO for the Atlanta area, annually publishes “Breaking Ground,” a report that keeps residents informed on the latest available implementation status of all projects that were programmed to receive funds in the most recently completed fiscal year. Published since 2003, the report is intended to inform citizens, planning agencies and decision-makers on how well the TIP is being implemented. ARC’s goal for the region is to get projects authorized and implemented as quickly as possible; this report is intended to help evaluate how successful project sponsors in the Atlanta region are in achieving this goal. ARC prepares the report using data maintained by the Georgia Department of Transportation (GDOT) and in coordination with project sponsors in the ARC planning region.

In the most recent report, covering FY2004, ARC evaluated a total of 459 FY 2004 Projects, of which 303 were underway, 146 were delayed and 10 were dropped. In the FY2004 report, new information was gathered to get a better understanding of why projects were delayed. All project sponsors were asked to provide reasons for the delays, as well as a status update for all their reprogrammed, reprioritized and dropped projects. ARC believes the new information will facilitate trends analyses in future “Breaking Ground” reports and help planners identify where the need for improvement exists.

4.5 Recommendation

The GTC should work directly with the NYSDOT Regional Office to develop a protocol for obtaining an annual report on the federal funds obligated for each project in the TIP. In addition, the GTC may wish to work with the New York State Association of MPOs (NYSMPO) to approach NYSDOT headquarters regarding a statewide protocol for reporting obligations, which would minimize regional variations in the amount and quality of information between (and even within) MPO regions. Further, as NYSDOT moves ahead with its “Transformation” initiative and modernization of its information systems, there should be opportunities for more timely and efficient transmission of project information and obligation data to MPOs.

As part of or separately from the obligations report, the GTC should also consider developing and publicly distributing an annual report on the actual implementation status of all, or at least regionally-significant, projects in the TIP. Such a publication would serve multiple purposes:

- enhance GTC’s understanding of when, how and why projects are delayed (or accelerated);
- provide additional information on publicly-funded projects to the region’s residents; and
- foster additional project sponsor accountability.

To make development of such a report workable, the GTC would need to pursue expanded cooperative information sharing arrangements with NYSDOT and the MPO member jurisdictions. In addition, to minimize the data generation and analysis burden for both GTC and project sponsors, a standardized annual inquiry format should be developed that draws mainly on existing or readily-generated project information. This would facilitate access to status information and make GTC’s summary reporting of that information more straightforward and expeditious.

5 Prioritization Flexibility

5.1 Issue

The GTC's reliance on quantitative project evaluation methodologies may limit the region's flexibility to fund worthwhile projects that do not score well based on traditional evaluation metrics.

5.2 Background

The primary purpose of an MPO's TIP development process is to allocate scarce resources to best meet its region's goals and objectives in a manner that is fair, transparent and equitable. For most MPOs, including GTC, this begins with a quantitative approach to project evaluation and prioritization in which projects are scored based on established criteria for various funding categories. The results of this scoring process are then combined with other, more qualitative considerations to determine which projects will be recommended for funding.

The challenge in project prioritization is to strike a balance between the need to employ a clear, merit-based approach, and the desire to maintain flexibility to meet needs that are driven by emerging trends, unique opportunities, or broader policy goals (beyond the transportation system). Factors that may be taken into account when trying to strike this balance include:

- **Transparency** – Prioritization processes must be clear, understandable and merit-based from the perspective of agency staffs, decision-makers, stakeholders and the general public.
- **System Enhancement Needs** – Prioritization mechanisms that value “soft” and non-traditional transportation needs (e.g., traffic operations systems and rest stops) are typically difficult to reconcile with prioritization mechanisms for traditional, reconstruction, facility improvement and capacity expansion projects.
- **Precedence Setting** – Creating special priority mechanisms or granting process exemptions for unique projects can create a slippery slope for allocating funds away from traditional needs.
- **Programmatic Structure** – Establishing special programs and/or funding pools for unique needs can improve prioritization flexibility, but also may dilute the effectiveness of core programs that are already under-funded.
- **Fair Share Considerations** – A prioritization framework can not be blind to equity issues related to geographic, historical allocation, socio-economic and population considerations.

5.3 Findings

In general, TDC members are satisfied with GTC's current project prioritization framework. In particular, the prioritization process developed prior to the 2001-2006 TIP cycle appears to have improved the geographic distribution of funds (e.g., rural counties have done better in recent years in securing funding for bridge projects). TDC members also expressed a high level of comfort with the fairness, transparency and regional strategic focus of GTC's project prioritization. Looking to the future, two areas of potential areas of concern were identified:

1. The transportation industry is evolving from a focus on capacity expansion and system preservation to an emphasis on system management, operations and maintenance. As this occurs, it is not clear how well projects such as operational improvements, basic maintenance and other non-traditional projects will fare within the existing prioritization framework.
2. Geographic equity issues could re-emerge because rural county Federal Aid roadway projects do not tend to compete well for funding given the current prioritization framework's emphasis on traffic volumes.

5.4 Examples

The approaches MPOs take to fund special or non-traditional needs vary widely across the country, and largely reflect the program structure of the respective DOTs. For example, some states such as Texas have specific funding pools for ITS investment, and thus MPOs can work with TxDOT to pursue funding for ITS initiatives in their region. In Rochester, the GTC has established some special set-aside funds in the TIP process for Pedestrian/Trails projects and Transit projects. For many MPOs, however, the solution to funding special needs has simply been to remain flexible and use a consensus-building process among MPO members to address occasional special needs on an ad hoc basis.

Many MPOs have limited influence over the allocation of state or federal funding beyond programs that must be allocated down to the region, such as STP and CMAQ funding. In these instances, there is little need for prioritization flexibility, since the range of eligible projects that can be funded with state allocations is fairly limited. The consistent lack of adequate funding for transportation funding at the regional/metropolitan level also appears to limit the desire of most MPOs to create specific programs or policies that direct more funding to rural needs.

5.5 Recommendation

Although the concerns identified in the findings section have the potential to become problematic in the future, they do not appear significant enough at this time to call into

question the GTC's existing policies and practices. Therefore, no formal action is recommended – revising the current prioritization framework to address these potential issues could create more problems than it solves.

With regard to operational, maintenance and non-traditional project needs, it does not appear that controversial issues with these projects occur frequently enough to justify changes to the prioritization framework. Instead, GTC should consider addressing these project needs on an ad-hoc basis when there is TDC consensus on the need for such projects to help achieve regional goals. Additionally, the potential geographic equity issue should be closely monitored, particularly to watch for the impacts of likely reductions in regional allocations of state and federal transportation funds.

6 Accessing Timely and Detailed Financial Information

6.1 Issue

The program-level funding information GTC receives from NYSDOT is typically neither detailed nor timely with regard to the TIP development schedule.

6.2 Background

Federal planning requirements mandate that MPOs develop financially constrained TIPs. This means that the total funding programmed in the TIP must be consistent with a reasonable estimate of the transportation funds that will be available to an MPO's region over the time horizon of the TIP. To effectively manage the financial constraint requirement, MPOs need accurate information on the revenues that will be available for programming as early as possible in the TIP development cycle. For most MPOs, the primary source of funding comes from the state DOT, and includes both federal and state funds. Estimates for future state DOT allocations to a region may be needed in two forms:

- **Total Funding** – The aggregate amount of state and federal funds that will be allocated to a region for a specific timeframe; and
- **Program-level Funding** – The details on how a region's total funding allocation must be allocated across different transportation investment programs (e.g., enhancements, bridges, Interstate, etc.), thus constraining the number of projects that can be funded in specific program areas.

Timely information about regional funding allocations is important. It helps MPOs manage expectations about what could get funded during a given TIP cycle, and it provides MPOs with time to assess the impact anticipated funding levels will have on the attainment of their strategic goals and objectives. Providing MPOs with timely funding allocation information, however, is not always a simple matter for a state DOT for several reasons:

- The annual federal transportation appropriations bill, which determines a state's federal apportionment of obligation authority, is frequently enacted late (i.e., after September 30th), which prevents the state DOTs from determining how much funding can be allocated to regions.
- Reauthorization of TEA-21 (the federal surface transportation act) has been delayed for over a year, keeping state DOTs in limbo about future federal funding levels and program structures.

- To avoid losing federal funding, a state DOT must ensure it commits (i.e., obligates) most federal funds prior to the end of the federal fiscal year. This can require a great deal of juggling at the state level to ensure the right level of funding is programmed under specific federal programs. As a result, state DOTs frequently employ an iterative approach to funding allocations, where they adjust and re-adjust regional program-level allocations until they have reconciled the statewide project mix with federal program-level funding levels. This process makes it difficult for a DOT to provide MPOs with final program funding levels until late in the budget development cycle.

6.3 Findings

GTC continues to struggle to get timely and accurate information on regional funding allocations from NYSDOT. Although the annual allocation level has been fairly predictable over the past few years, there is no guarantee this will continue in the future. GTC needs to understand, in as timely a manner as possible, the amount of funds it will have to use for each TIP Update so that the project selection and prioritization process remains valid. This is particularly important if federal funding becomes more constrained under TEA-21 Reauthorization.

Typically, GTC receives overall funding allocation estimates at the beginning of its TIP Update cycle, but these are based only on past years' levels. The overall estimate may be refined at the point of project evaluation, but is still reflective of funding history rather than projections of revenue streams. Breakouts of program-specific funding levels are not developed until projects have been selected for inclusion in the draft TIP, and these are driven by the makeup of the project list itself, rather than an allocation protocol based on the LRTP Goals or NYSDOT policies.

Under the current protocol, GTC would have little advance notice of major changes to funding allocations that might significantly affect regional project priorities and/or the GTC's ability to include certain projects in the TIP. GTC needs to receive more reliable funding allocation information earlier in the TIP Update process, preferably prior to the project solicitation point so that constraints on or changes to the ability to accommodate new projects or major changes to existing projects can be understood and addressed in a timely manner. *(Note: for the Fall 2004 TIP update cycle, NYSDOT invited MPOs to participate in the development of projected TIP funding allocations. This meeting was held in August 2004.)*

6.4 Examples

In the late 1990s, the **Idaho DOT** decided to suballocate STP local funds among the three MPOs in Idaho. This process is based on a mutual agreement through a memorandum of understanding (MOU) among the MPOs and DOT. The three MPOs meet at least

annually to determine the split among them, and funds are re-suballocated throughout year as needed (e.g., if one MPO cannot use some of the suballocated funds and another needs them, the MPOs will work together to reallocate the funds to help meet pressing needs). Annually, the three MPOs split about \$5.5 million. As the largest MPO, COMPASS (Boise region) usually receives about \$3 million. The other Idaho MPOs often “bank” their funds over the years to accumulate enough to undertake a project. The MPO-DOT agreement includes a “hold harmless” provision pertaining to situations in which projects slip due to circumstances beyond MPO’s control. COMPASS characterized cooperation among the MPOs as “phenomenal.”

Following TEA-21 enactment in 1998, the **Pima Association of Governments (PAG)**, the MPO for the Tuscon, Arizona region, coordinated with the Maricopa Association of Governments (MAG), the MPO for the Phoenix region, and approached the Arizona DOT (ADOT) regarding rethinking the traditional approach to allocating transportation funds in the state. Also in 1998, the USDOT conducted a recertification review of the PAG transportation planning program and made a finding of a deficient cooperative revenue forecasting process. This finding, along with TEA-21’s strengthening of the cooperative revenue estimation requirement and the 90.5 percent minimum funding guarantee for Arizona, provided a catalyst for development of revised transportation planning and programming process in the state, known as the “Casa Grande Resolves.” Among its guiding principles are that “the Statewide Transportation Plan and Programs will be based on clearly defined and agreed to information and assumptions, including the resources available...” and that “the [statewide] program represents an equitable allocation of resources.”

To implement the revenue estimation process element of this new approach, ADOT convened an entity called the “Resource Allocation Advisory Committee (RAAC).” The RAAC includes representation from ADOT (4 officials), TMAs (2 Directors), MPO/COGs (2 Directors), and a TMA Transit Director. The RAAC is chaired by the ADOT Deputy Director. The RAAC operates on a consensus decision-making basis only; there is no voting. The RAAC provides funding allocation figures to PAG by August/September of each year. The draft STIP, which includes the MPO TIPs, is developed in October/November of each year, with TIP adoption by July 1, which is the start of the fiscal year.

Since 1997/98, the **Pennsylvania Department of Transportation (PennDOT)** has used a cooperative revenue forecasting process known as the “Planning Partners.” This group consists of representatives from the 14 MPOs, the six Local Development Districts (LDDs, the rural equivalents of MPOs), several independent counties, the State DOT (Central and Districts), FHWA, FTA, EPA, SEPTA (Southeastern Pennsylvania Transportation Authority, the state’s largest transit operator), the Pennsylvania Turnpike Commission and the State Transportation Commission.

Prior to the beginning of a TIP update cycle and based on the consensus of the Planning Partners and its Financial Work Group subcommittee, the state publishes a report entitled “Transportation Program Financial Guidance,” which includes estimates of funds available for highways and transit from Federal and state sources. Formulas are used to distribute funds among MPOs (and rural areas). The formulas vary by funding category. Included in the distribution rationale is a level of discretionary funding at the state level. The Financial Guidance reflects the consensus of the Planning Partners (see above) and discusses revenue forecasts, methods for distribution of funds among jurisdictions and includes numerous tables giving allocations for various funding categories. The state also provides the MPOs with a list of projects obligated on a quarterly basis, with a summary comparing obligations vs. targets by region and statewide.

6.5 Recommendation

The overall recommendation for addressing this issue is for the GTC to work more closely with the NYSDOT Regional Office to improve the timeliness and level of detail of revenue allocation information. To the extent possible, GTC should seek to obtain this information in sync with the major milestones of its TIP development process, preferably prior to the project solicitation notices so that major changes to revenue availability can be accounted for as the program begins to be structured.

However, as with project obligation information, it is highly likely this is an issue that will require collaboration between the NYSMPO Association and NYSDOT at the statewide level. The recent Shared Cost Initiative “Long-term Funding Needs Study,” which identified available revenues, determined justifiable needs and determined optional sources that could be used to fund transportation over the next 25 years for all MPOs statewide and for individual MPOs, is one such collaborative process that could be leveraged to improve the quality and timeliness of revenue allocation information. The NYSDOT’s “Transformation” process may also provide an avenue by which this issue can be raised and addressed by the Association and/or individual MPOs.