STIP STATE OF THE PRACTICE REVIEW:

DEVELOPMENT AND USE OF STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAMS

May 2016

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14. ABSTRACT

This report examines the state of the practice in the development and use of statewide transportation improvement programs (STIPs) by state departments of transportation (State DOTs). It includes the results of a scan of all 52 publicly-available STIPs as of January 2014, a more detailed analysis of 14 STIPs which were selected as a group representing varying styles and techniques, and a discussion of three general descriptive models for understanding how ways in which State DOTs develop and use STIPs in the statewide transportation planning process both to meet regulatory requirements and to support broad agency goals such as communicating information to the public and performance-based planning and programming. The report features numerous illustrative examples of STIP practices from the 14 STIPs selected for more detailed analysis and summarizes potential future advancements in STIPs as "food for thought" in a theoretical "Enhanced STIP" model.

15. SUBJECT TERMS

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Contents

I. Introduction

In the decades since the Statewide Transportation Improvement Program (STIP) requirement was first introduced into Federal surface transportation law, States have developed a variety of ways to use the STIP to advance the effectiveness of transportation planning. This white paper examines the state of the practice in STIP development, documentation, and use by State Departments of Transportation (State DOTs) and provides numerous examples of effective practice. The white paper presents conceptual models which generalize the diverse STIP practices employed by State DOTs, and provides a technical resource to facilitate self-assessment, information exchange, and learning among State DOT peers and their planning partners. Readers of this white paper may also be interested in the related 2012 FHWA report on Trends in Statewide Long-Range Transportation Plans and the companion State Long Range Transportation Plans Database.

Purpose and Audience

This white paper will provide State DOTs with context and examples for how their peers develop and use the STIP as part of the overall statewide transportation planning and programming process. It is intended as a technical resource to support State DOTs in thinking about potential enhancements to STIPs and the planning processes they use to develop and implement them. The primary audience is State DOT planning staff, but metropolitan planning organization (MPO), local government, and transportation authority staff involved in transportation planning and programming will also find this white paper relevant and valuable.

In this White Paper

This white paper includes numerous examples of STIP practices employed by State DOTs, a table of links to all STIPs reviewed in a 50 State scan conducted in January 2014, and an analysis of how the research team applied insights from an assessment of a representative sub-set of those STIPs to describe three conceptual models of STIP development. These resources will assist States to identify innovative approaches to the STIP, to identify peers who have implemented STIP processes they may be interested in learning more about, and to adapt information to enhance the effectiveness of their STIP and related planning processes.

This white paper also discusses potential future enhancements which may be on the horizon as State DOTs continue to adapt their STIPs and processes to accommodate new Federal performance management and performance based planning requirements, for example, through improved public transparency, and a shift to connecting plans and investments to measurable performance of the transportation system.

What is a STIP?

A STIP is a key document in the Federal transportation planning and programming process. States are required to develop STIPs covering at least four years of federally-funded surface transportation projects in consultation with MPOs, Tribal governments, and local governments in nonmetropolitan areas, and with the participation of the public and interested parties.[1] Projects contained in the STIP must be consistent with the statewide transportation plan, identical to project phases in approved metropolitan transportation improvement programs and consistent with approved metropolitan transportation plans, and must be in conformance with applicable State air quality implementation plans.[2] STIPs must demonstrate fiscal-constraint and may include a financial plan, including project phases which the State reasonably expects can be fully funded within the specified time period, and illustrative projects that would be included if additional resources become available.[3] States are required to update the STIP at least once every four years and the STIP and any amendments must be approved by FHWA and the Federal Transit Administration (FTA).[4,5]

Looking beyond the specific Federal requirements, it is useful to identify additional key purposes for the STIP in planning the statewide transportation network. The requirement to develop and maintain a STIP supports several key aspects of Federal programs and effective transportation planning, including:

- **Increasing public transparency** of the use of Federal funds for transportation projects by compiling all Federally-supported projects in one document
- **Ensuring appropriate consultation** among transportation planning partners in each State so that Tribal, local, and regional priorities are considered
- **Reflecting the multimodal nature of the Federal surface transportation program** and a focus on multimodal system efficiency by including projects across all modes of surface transportation
- **Supporting sound financial planning** by requiring that the projected costs of included projects are consistent with funds reasonably expected to be available to implement them
- **Improving the efficiency of oversight** of the use of Federal funds for transportation by requiring that all Federally-supported projects be listed in the approved STIP

[1] 23 USC sec. 135(g)(1-3)
[2] 23 USC sec. 135(g)(5)(D)
[3] 23 USC sec. 135(g)(5)(E-F)
[4] 23 USC sec.135(g)(7)
[5] The Transportation Planning Process: Key Issues

The STIP is the formal mechanism for documenting the results of programming decisionmaking processes at various levels in the State. Although the majority of the STIP documents provide lists of projects, the processes that lead to the development of the STIP and the ways in which State DOTs use the STIP are of great importance for how the STIP can positively influence the statewide transportation planning and programming process. Through this perspective, the lifecycle of the STIP can be envisioned in three major stages, described below and in Figure 1.

1) STIP Development: Processes by which the STIP is developed, including the participation by key parties involved and their roles and responsibilities
2) STIP Document: The formal STIP document, the information it contains, and supporting resources
3) STIP Use: How the STIP document is used in the overall statewide transportation planning and programming process, including its role in implementation of investment decisions

Figure 1: The three major stages of the STIP lifecycle

How do States use the STIP?

State DOTs use a broad range of processes for STIP development and documentation; similarly, each State uses the STIP in different ways. Because projects must be included in the approved STIP to be eligible for Federal funding, all States produce STIPs which meet the Federal requirements; however some states met the requirements better than others. Many States have capitalized on the opportunity of the STIP requirement to advance broad planning goals – most notably, to associate investment decisions with the policy direction and goals in the statewide plan, to increase the transparency of the planning and programming process, or to implement performance-based planning and programming practices.

The Moving Ahead for Progress in the 21st Century Act (MAP-21) added a new requirement that STIPs include a discussion of how the STIP will affect the achievement of performance targets in the statewide transportation plan. This new performance management element is being implemented in Federal regulations[6] and the STIP will become a key mechanism in transportation performance management. Many States have already begun to address performance management in their STIPs prior to and in anticipation of the Federal performance management requirements. However, it is anticipated that many more States will consider modifications to elements of their STIP processes in the coming years as performance management evolves to eventually become a standard practice across all State DOTs and

[6] http://www.fhwa.dot.gov/map21/factsheets/pm.cfm

MPOs. This shift to include performance management in STIPs will also present an opportunity to consider other related enhancements and modifications to the STIP process.

II. Methodology

Research for this white paper was limited to a desk review of STIPs and supporting documentation which were publicly-available in January 2014. The analysis focused on the structure of the STIPs and supporting documentation, which provides context for how the STIPs were developed. The research team was not concerned with analyzing specific programs of projects or project details, but with identifying structural and procedural aspects of the statewide planning and programming processes used by State DOTs. The focus was on the STIPs themselves, their purpose, and use, and on identifying associated insights into the STIP development and implementation processes by examining the STIP document and associated publicly-available resources.

The project was conducted in three phases:

1. A 50 State scan of current STIPs and supporting documentation;
2. A detailed analysis of a selected subset of STIPs; and
3. Generalization of STIP models

Phase I: 50 State Scan

Phase I of the project consisted of a scan of the current STIPs for all 50 States plus Washington, D.C. and Puerto Rico. Only the STIP document and supporting documentation were reviewed in this initial scan. The intent of the scan was to develop a broad understanding of the following topics:

- **The various approaches** used by State DOTs in developing STIPs;
- **The level of detail** included in STIPs, including how information is presented; and
- **How the completed STIP document is used** in the planning process (to the extent possible through review of the STIP itself and a scan of publicly-available planning materials).

The research team identified several interesting characteristics with respect to STIP development, documentation, and use during the 50 State scan shown in Table 1. More detailed results of this scan are captured in Table 3 in Appendix A, along with links to all 52 STIPs. The team acknowledges that because research was limited to publicly-available materials, the scan may not have fully captured the practices of each individual State.

The characteristics identified during the 50 State scan include:

- **Use of visualization techniques such as maps or flow charts**[7]
- **Narrative summary of the contents of the STIP and project list**
- **Rational integration with or linkage of planning concepts, goals, or objectives to other planning documents, including:**
  - Statewide Long Range Transportation Plan (SLRTP)
  - Metropolitan Transportation Improvement Programs (TIPs)
  - Metropolitan Transportation Plans (MTPs)
- **Performance-based project selection criteria or process**
- **Robust public involvement in STIP development**[8]
- **Explicit statement of STIP's use:**
  - As a financial planning document
  - To implement Statewide LRTP
  - For communications and public accountability
  - For project management, financial oversight
- **Quantitative estimates of STIP project performance outcomes**

The research team used the characteristics shown above and in Table 1 to identify a representative set of 18 STIPs for further analysis. The 18 STIPs were selected because of characteristics the research team thought would be valuable for peer State DOTs. An "X" in the table indicates which of the STIPs illustrated that particular characteristic based on a limited scan of publicly-available materials. The research team was not able to analyze all STIPs in detail and acknowledges that information about some STIP processes may not be publicly available. Therefore, readers should not interpret the absence of an "X" in the table as implying that that a STIP does not demonstrate a particular characteristic, but rather that the presence of an "X" indicates that it does. The authors acknowledge that there are likely many additional examples which are not highlighted in this white paper due to the narrow nature of the initial scan and because not all information related to STIP practices is publicay available online. Some States may be participating in STIP-related activities that are not described in any publicly available documents online.

[7] Visualization in Planning, FHWA
[8] Public Involvement and Public Participation, FHWA

Table 1: Results of 50 State STIP Scan

	Use of visualization techniques	Narrative summary of STIP contents	Rational integration with or linkage to LRTP, TIP, MTP	Performance-based project selection criteria/process	Meaningful public involvement in STIP development	Use of STIP as financial planning document	Use of STIP to implement LRTP	Use of STIP for public communication /accountability	Use of STIP for project management, financial oversight	Quantitative estimates of STIP performance
Alabama		X				X		X		
Alaska	X	X		X		X	X	X		
Arizona		X	X	X		X		X		
Arkansas		X				X				
California		X	X	X		X	X			X
Colorado	X	X	X	X	X	X	X		X	
Connecticut		X	X			X	X			
Delaware		X				X				
Florida						X		X		
Georgia		X	X		X	X	X			
Hawaii	X	X		X	X	X		X		
Idaho		X	X	X		X				
Illinois		X	X		X	X				
Indiana		X			X	X				
Iowa	X	X			X	X		X		
Kansas		X	X	X	X	X	X	X	X	
Kentucky		X	X	X	X					

	Use of visualization techniques	Narrative summary of STIP contents	Rational integration with or linkage to LRTP, TIP, MTP	Performance-based project selection criteria/process	Meaningful public involvement in STIP development	Use of STIP as financial planning document	Use of STIP to implement LRTP	Use of STIP for public communication /accountability	Use of STIP for project management, financial oversight	Quantitative estimates of STIP performance
Louisiana		X								
Maine		X	X	X			X			
Maryland			X	X	X	X	X			
Massachusetts		X							X	
Michigan	X	X	X	X	X		X	X		
Minnesota		X	X	X		X	X		X	X
Mississippi		X			X	X				
Missouri		X	X	X	X					
Montana			X	X						
Nebraska		X			X					
Nevada		X	X		X	X		X		
New Hampshire		X				X				
New Jersey		X	X	X		X	X			
New Mexico										
New York		X	X	X	X	X				
North Carolina	X	X		X						
North Dakota		X	X							
Ohio		X				X				
Oklahoma	X	X	X							

	Use of visualization techniques	Narrative summary of STIP contents	Rational integration with or linkage to LRTP, TIP, MTP	Performance-based project selection criteria/process	Meaningful public involvement in STIP development	Use of STIP as financial planning document	Use of STIP to implement LRTP	Use of STIP for public communication /accountability	Use of STIP for project management, financial oversight	Quantitative estimates of STIP performance
Oregon		X	X	X	X	X				
Pennsylvania										
Rhode Island		X	X	X	X	X	X			
South Carolina		X	X			X				
Tennessee		X								
Texas		X								
Utah				X					X	
Vermont										
Virginia		X								
Washington		X	X	X		X				
West Virginia	X	X				X				
Wisconsin		X			X	X				
Wyoming	X	X		X					X	
District of Columbia		X	X		X			X		
Puerto Rico		X	X							

Phase II: Analysis of Selected STIPs

Following the 50 State scan in Phase I, the team selected 18 STIPs for more in-depth review. These STIPs were selected to be representative of the various approaches to development, documentation, and use of the STIP identified in Phase I. The STIPs selected are listed in Table 2 below.

Table 2: STIPs Selected for Detailed Analysis in Phase II

Arizona	**California**	**Colorado**	**Hawaii**
Kansas	**Maine**	**Maryland**	**Michigan**
Minnesota	**Montana**	**New Jersey**	**New York**
North Carolina	**Oregon**	**Pennsylvania**	**Rhode Island**
	Utah	**Wyoming**	

The research team conducted a thorough review of these States' STIP documents as well as other publicly-available documents which describe the development and use of the STIP, such as statewide multi-modal long-range transportation plans, single-mode or special-purpose plans, and performance reports. For each of the 18 States, the team attempted to understand and characterize the individual approaches to development, documentation, and use of the STIP employed in the State. The findings of Phase II are presented in Table 4 in Appendix A and interspersed throughout this report as examples.

Phase III: Generalization of STIP Models

The research team used the detailed analysis of the selected STIPs in Phase II to construct generalized models for how State DOTs develop and use STIPs. The goal for this phase of the project was not to categorize the STIPs, but rather to develop general models as tools for evaluating different alternative approaches, to encourage discussion and peer learning, and to assist State DOTs in considering their own and alternative approaches. The team also developed a theoretical "model" STIP, which combines effective aspects of the existing models and reflects a possible direction for DOTs to consider in developing future STIPs.

III. Models for STIP Development

The research team developed three models to describe the various approaches State DOTs use to develop their STIPs. The models are listed and described in detail in this section.

1. **Connective Model**
2. **Collaborative Model**
3. **Graduated Model**

The research team's intent in describing these models is not to suggest that there is a limited number of ways in which States may proceed with developing their STIPs. On the contrary, the team recognizes that every State's context and process may be different. The team presents these models as three general approaches to conceptualizing the diverse ways in which States approach STIP development, to help State DOTs better understand variations in practice across peer States, and to help DOTs to identify potential opportunities to improve their own practices.

Connective Model

The Connective Model describes a decentralized approach to STIP development. In this model MPOs manage the regional Transportation Improvement Program (TIP) development process with guidance from the State DOT that is primarily focused at one key point in the process. This focal point may be at the beginning or the end of the program development process, but in both cases program development proceeds along parallel, but separate paths at the State and metropolitan levels, with the resulting programs connected together to form the STIP. The Connective Model is discussed below and case examples are provided in the box to the right.

Later Stages Coordination Focus

When the coordination focal point is near the end of the program development process, the Connective STIP development model may provide significant autonomy and flexibility to regional and local jurisdictions to develop a program of projects which reflects regional priorities and goals. By keeping some distance from the regional TIP development processes, and by allowing non-metropolitan jurisdictions to develop their own initial lists of projects, regional priorities are emphasized from the early stages of program development. In this model, MPOs and non-metropolitan jurisdictions are expected to be cognizant of statewide long-range transportation plan goals and responsible for ensuring that submitted projects are both consistent with those goals and with regional priorities. Also, the State DOT provides relevant inputs for State-managed facilities, and provides oversight of TIP and STIP development processes.

Program Development in the Connective Model - Case Examples

In the Connective Model, State DOTs, MPOs, and local jurisdictions may interact in a variety of ways during the STIP development process. The development of initial project recommendations, the process for review and comment, and procedures for final approval vary significantly from State to State. The following examples illustrate elements of the Connective Model.

Connecticut DOT (CDOT) provides a list of recommended projects to MPOs in the State. The MPOs then review and edit the list for any differences between the proposed projects between the Planning Regions and CDOT, which are addressed and resolved with CDOT. The MPOs next incorporate the list into their TIPs. Once TIPs are finalized, they are integrated as-is into the STIP. This process is described in CDOT's STIP Narrative.

Wyoming DOT (WYDOT) districts submit needs analyses which define each district's transportation needs. WYDOT uses this list to develop a list of potential projects statewide. Potential projects are subject to input from the MPOs and other stakeholders. Wyoming DOT review s the resulting list for consistency with the statewide LRTP. Wyoming DOT submits the resulting list to the MPOs for inclusion in the TIPs. The Introduction to WYDOT's STIP describes this process.

Utah DOT (UDOT) and MPOs in the State make project recommendations to one another for programming in the TIPs and STIP. However, all projects, including MPO-recommended projects are subject to selection criteria provided by UDOT. Once approved, the TIPs are integrated into the STIP as-is. This process is described in the STIP Development Process document.

Early Stages Coordination Focus

In other cases, State DOTs may focus coordination efforts primarily in early stages of program development. In these cases, State DOTs may provide initial project recommendations to MPOs and non-metropolitan jurisdictions as they begin building their programs. In this model, State DOTs may work to reflect regional priorities in initial project recommendations, with MPOs and non-metropolitan jurisdictions refining and adding to the project priorities as the programming process proceeds, sometimes working within pre-established statewide criteria.

Discussion

The Connective Model enhances flexibility in the metropolitan and non-metropolitan program development processes and simplifies the complexity of combining projects across multiple jurisdictions into one STIP. However, this approach might reduce opportunities for iterative and collaborative review and adjustment of projects, which can help balance goals among participating agencies.

If different planning jurisdictions develop programs with varying formats and levels of detail in project lists, it might be more difficult to produce a STIP that clearly demonstrates coordination across jurisdictions and a unified statewide program. Similarly, it may be more difficult to demonstrate how projects across different jurisdictions are linked to statewide goals or performance outcomes without a common format and approach. In some cases, the State DOT, MPOs and other planning partners may agree to a common format in advance to make it easier to demonstrate connections among programs in the STIP. The agencies may also map out the relationships between statewide goals and regional and local goals to demonstrate how projected impacts and outcomes of the statewide program can be rolled-up from and communicated at different geographic or modal scales.

Collaborative Model

The Collaborative Model features regular interaction between jurisdictions throughout all stages of the STIP development process. This interaction can come in many forms, but the Collaborative Model describes a coordination process between the State DOT, MPO(s), and non-metropolitan jurisdictions that extends throughout the entire STIP development timeline. Regardless of the methods used to coordinate program development among the participants, the Collaborative Model is characterized by cooperation among planning jurisdictions in the development of programs of projects at the state, regional, and local levels. There are multiple linkages at different points throughout the decision-making process through which projects are ultimately funded and included in the STIP. Some examples of the Collaborative Model are featured in the breakout box on the following page.

Discussion

The Collaborative Model may provide more opportunities than the Connective Model for feedback, iteration, and adjustment of preliminary TIPs and STIPs before project lists are consolidated and finalized. Greater engagement and cooperation throughout the process may allow the various planning jurisdictions to better understand each other's needs and priorities, and to better align their individual programs such that the resulting STIP is more effective at addressing and balancing local, regional and statewide goals. In some cases, States may be able to better align the project selection criteria across the various jurisdictions, which may become more important as DOTs and MPOs begin to integrate performance management into their planning and programming processes. The Collaborative Model may also allow for organizations to gather more comprehensive public input into all projects being considered for inclusion in the STIP, as information about each other's potential projects may be able to be shared at earlier stages.

Program Development in the Collaborative Model - Case Examples

In the Collaborative Model State DOTs, MPOs, and local jurisdictions work together throughout the full timeline of the STIP development process in a variety of ways. The following case examples illustrate aspects of the Collaborative Model.

Colorado DOT (CDOT) regional transportation directors meet with the MPOs in their CDOT engineering region to discuss project selection and prioritization for the TIPs. Each TIP is then included in the STIP by reference. CDOTs rural transportation planning regions in do not develop their own TIPs. Instead they work closely with CDOT to identify and prioritize projects for direct inclusion in the STIP. CDOT forwards projects suggested for urban areas to the appropriate MPOs for consideration. CDOT's Annual Project Priority Programming Process (4P) and STIP Development Guidelines document describes this process in detail.

Michigan DOT (MDOT) uses input from rural task forces, which represent the jurisdictions that provide transportation services in cities and villages with fewer than 5,000 residents, in the STIP development process. Project selection decisions are guided by input received throughout the planning process and made in consultation with MPOs and regional planning agencies that have rural task forces. The MPOs develop their TIPs by working with city and county transportation agencies, local transit operators, and State transportation officials. Once TIPs are developed, they are incorporated into the STIP as-is. The MPOs and MDOT have established an overall process for tying together the Statewide LRTP, local plans, and STIPs and TIPs. MDOT's STIP includes a flow chart that describes the State's approach. A simplified version is shown in Figure 2.

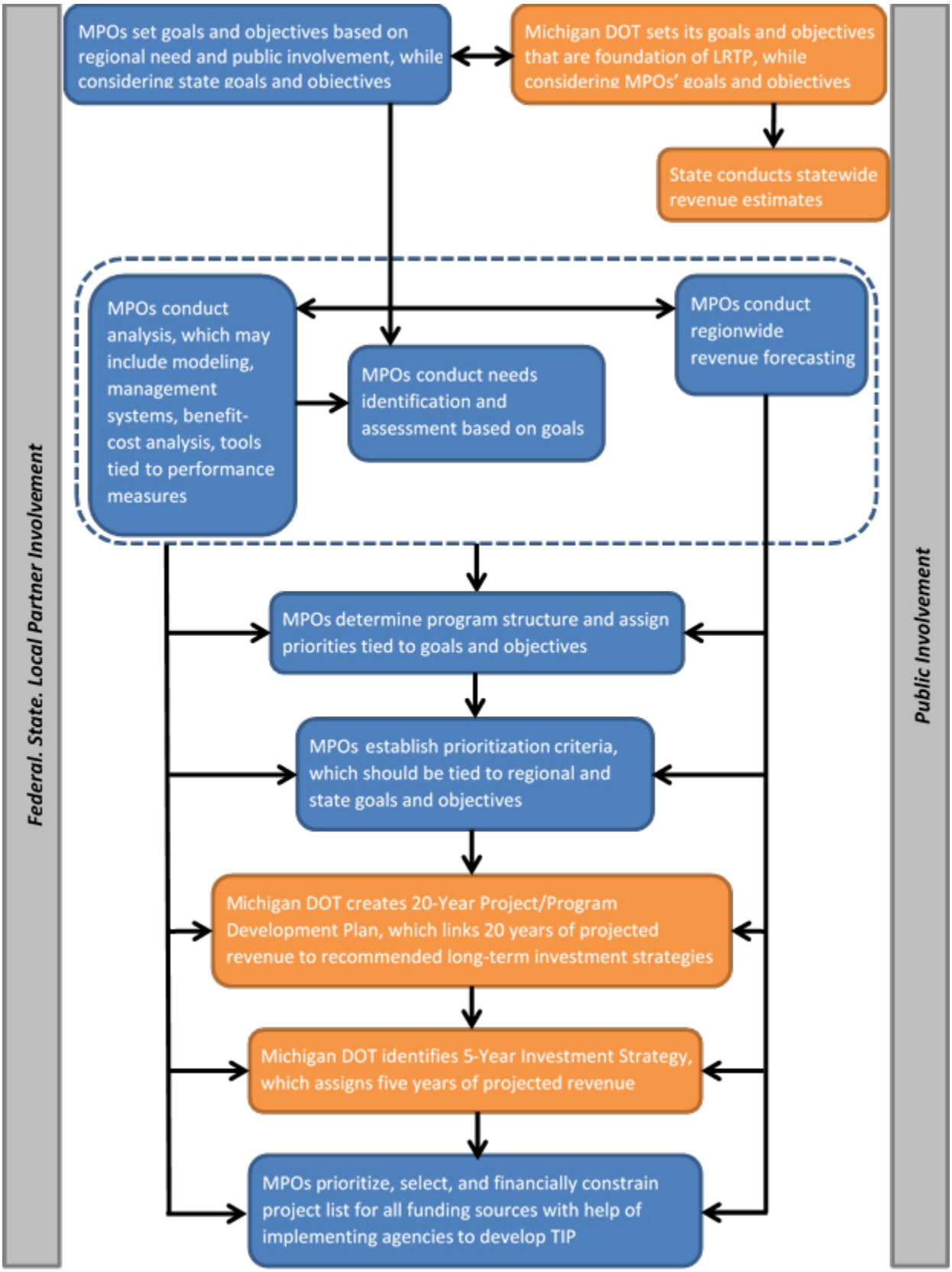

Figure 2: MDOT STIP development process diagram (adapted from: MDOT 2014 – 2017 STIP)

Graduated Model

In a few States, the programming of projects across MPOs occurs at an interregional district level which often contains more than one planning jurisdiction. In this Graduated Model States employ a phased approach where an intermediate panel or council coordinates the program development across MPO or regional planning boundaries. The details of how States execute STIP development in the Graduated Model differ, but the key is that the State formally considers interregional priorities and develops interregional programs based on those priorities. Once approved, the interregional programs are incorporated into the STIP and all relevant TIPs.

The Graduated Model moves the comprehensive project selection process to an interregional level (sub-State, but larger than a metropolitan area). It is similar to the Collaborative Model in that there is cooperation among planning jurisdictions throughout all stages of program development. Like the Collaborative model, the Graduated Model also provides opportunities for the various organizations to comprehensively evaluate the region's overall needs through an iterative process. This model may be particularly useful in large States with numerous metropolitan areas and MPOs or where there are major differences in the extent of urbanization across the State (i.e., one or two large metropolitan areas surrounded by very low density rural area). Two examples of the Graduated Model are featured in boxes to the right and on the next page.

Program Development in the Graduated Model - Case Examples (Box 1 of 2)

In the Graduated Model, State DOTs, MPOs, and local jurisdictions may collaborate at an interregional level as well as within their own jurisdictions. This creates another layer of STIP development that considers how projects are programmed across regions. The following examples illustrate aspects of the Graduated Model.

Minnesota DOT (MnDOT) employs a performance-based project selection process that is comprised of two iterative processes. First MnDOT compiles a draft program from the projects included in each of the Area Transportation Improvement Programs (ATIPs), which are created by interagency groups called Area Transportation Partnerships (ATPs). There are eight ATPs in the State (see Figure 3 below), and each includes representatives from MnDOT, MPOs, and other regional and local partners. ATIPs are developed according to local priorities and then compared to State goals, objectives, and fiscal constraint before being integrated into the STIP. The second part of the process involves the ATPs reviewing and commenting on the draft STIP. This process is repeated every year to determine which projects will be implemented in the first year of the STIP. Figure 4 describes the full planning and programming process, which is explained in detail in the STIP and in the complementary Overview of Planning and Programming in Minnesota document.

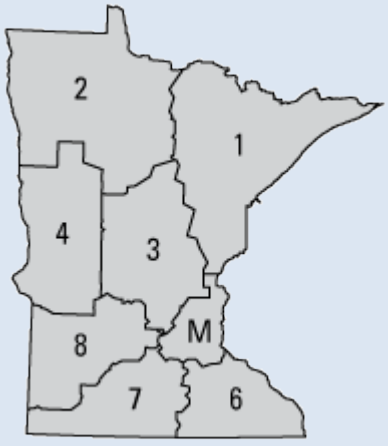

Figure 3: MnDOT Area Transportation Partnership boundaries
SOURCE: Overview of Planning and Programming in Minnesota, 2010

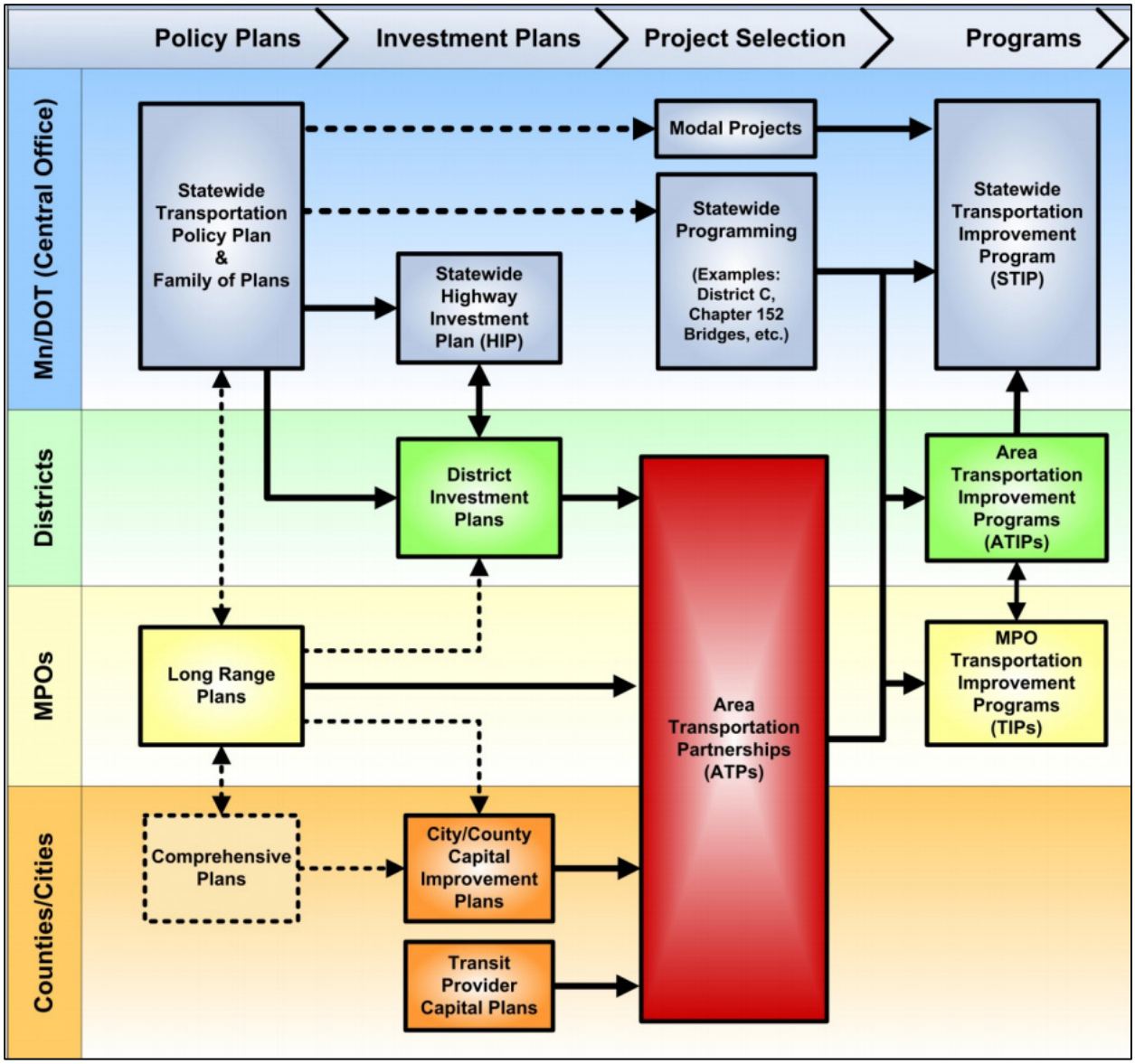

Figure 4: Planning and Programming Process in Minnesota
SOURCE: Overview of Planning and Programming in Minnesota, 2010

Discussion

By segmenting the program development into logical interregional districts, the complexity of the STIP development process may be reduced and the overall process streamlined. In some cases, the State transportation planning context may be so vast and complex that it makes project evaluation, ranking, and prioritization at the statewide level difficult or impractical. In other cases, transportation needs and preferences may vary significantly across the geographies of the State, creating the need to appropriately account for these differences. However, if statewide analysis is not complex or if the transportation context of the State is generally uniform, the Graduated Model may introduce unneeded complexity into the STIP development process. Furthermore, the Graduated Model may make it difficult to appropriately account for truly statewide projects when evaluating the proposed projects at an interregional level.

These benefits of coordination across formal planning boundaries can be associated with FHWA's Every Day Counts Regional Models of Cooperation initiative of multijurisdictional coordination. When multiple MPOs work together to coordinate planning documents, it may be that transportation needs can be identified more comprehensively, with a focus on system-wide performance, and major projects that cross jurisdictional boundaries can be identified and analyzed more effectively. This type of coordination may be one way to help develop interregional solutions to planning concerns that often cross formal jurisdictional boundaries such as congestion management, safety, freight, livability and commerce.[9]

Program Development in the Graduated Model - Case Examples (Box 2 of 2)

California DOT (Caltrans) STIP development process uses a graduated process to develop three programs, which are then integrated into the STIP. The Caltrans STIP integrates Regional TIPs (RTIPs), Interregional TIPs (ITIPs), and safety projects included in the State Highway Operations and Protection Program.

MPOs and Regional Transportation Planning Agencies (RTPAs) in California develop their own RTIPs, which are compiled and integrated into the STIP. Each RTIP is based on the Regional Transportation Plan (RTP) collaboratively developed by the MPOs and RTPAs. Caltrans may nominate or recommend State highway improvement projects for inclusion in the RTIP. The regional agency has sole authority for deciding whether to accept Caltrans' STIP recommendations for programming in the RTIP. The overall RTIPs must be approved by the California Transportation Commission (CTC).

The ITIP consists of STIP projects funded from the interregional program share, which come from Caltrans nominations. Caltrans selects a list of ITIP projects and submits it to the CTC, which reviews it based on interregional goals from the Caltrans Interregional Transportation Strategic Plan (ITSP).

Each RTIP and ITIP submitted to the CTC must include a report on its performance and cost-effectiveness, demonstrating how effective they are in addressing the goals, objectives, and standards which are established as part of the respective RTP or Caltrans' ITSP.

Caltrans' STIP is developed based on state guidelines and includes Federally-funded projects as well as those that are not Federally-funded. Caltrans develops an additional Federal STIP, or FSTIP, that includes only Federally-funded projects and complies with Federal regulations.

Figure 5 describes California's planning and programming process, which is further described in the CTC STIP Guidelines.

[9] http://www.fhwa.dot.gov/everydaycounts/edc-3/regional.cfm

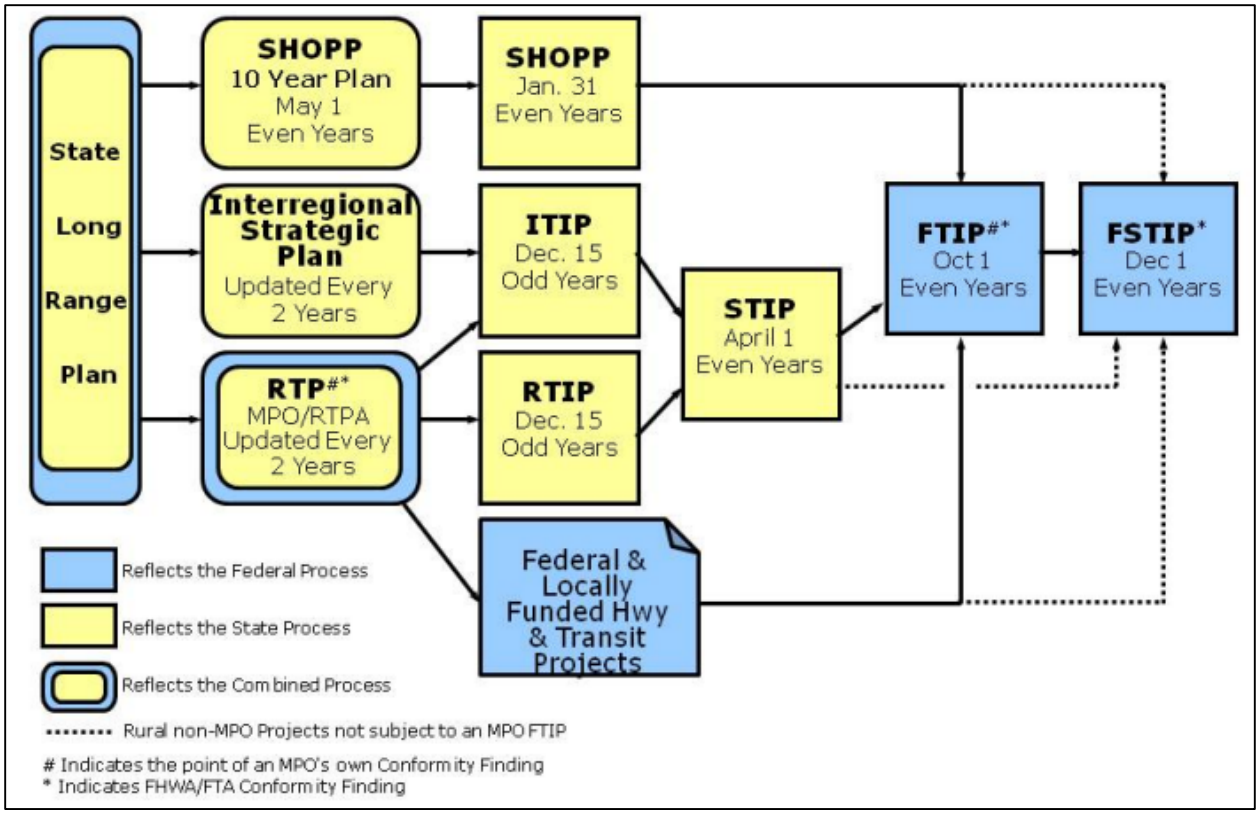

Figure 5: California's Planning and Programming Process
SOURCE: 2015 Caltrans Federal STIP

IV. Using STIPs to Advance Broad Planning Goals

Many States use the STIP as an opportunity to advance broad planning goals – notably, to increase the transparency of the planning and programming process, to implement and manage performance-based planning and programming practices, or to advance State transportation policy goals. These States have paired their STIPs with interactive maps and visualizations. Other States are producing performance reports or dashboards that track a suite of strategic performance measures based on statewide plan goals and objectives, using the STIPs as a mechanism to demonstrate how programmed projects relate to the goals and objectives. A few States are engaging regional and local agencies to advance State policy goals by using the MPO TIPs as a way to monitor progress toward these goals.

Increased Transparency

At its core the STIP is the formal means of documenting the investment decisions that result from the statewide and regional transportation planning and programming processes in the State. This formal documentation is needed not only to facilitate efficient and comprehensive Federal oversight of how States, MPOs, and local governments plan to use Federal and non-Federal transportation funds, but also to ensure that these decisions are transparent to interested parties and the public.

By providing a comprehensive, multimodal, consolidated list of all federally-funded transportation projects, the STIP provides a "one-stop shop" for information on how the State DOT and other organizations in the State plan to invest Federal and non-Federal funds in the statewide transportation network. However, due to the extensive number and diversity of projects typically presented in a STIP, many States have looked for ways to further increase public understanding of the program in the STIP.

Many States have chosen to enhance their STIPs with contextual information about the planning process, more detailed project descriptions, and supplementary tools which help interested parties and the public understand and engage with the program presented in the STIP. These enhancements may be included in the STIP document itself, in the form of charts, graphics, and narrative descriptions, or they may be provided through supporting narrative documentation, interactive maps, or project visualization tools. For example, Michigan DOT has developed a publicly-available online mapping tool for their Five Year Transportation Program. The user can select the program year and zoom into different geographic areas. Clicking on a project icon on the map will show the user a pop-up window containing basic project information. Figure 6 shows a screen shot of the mapping tool.

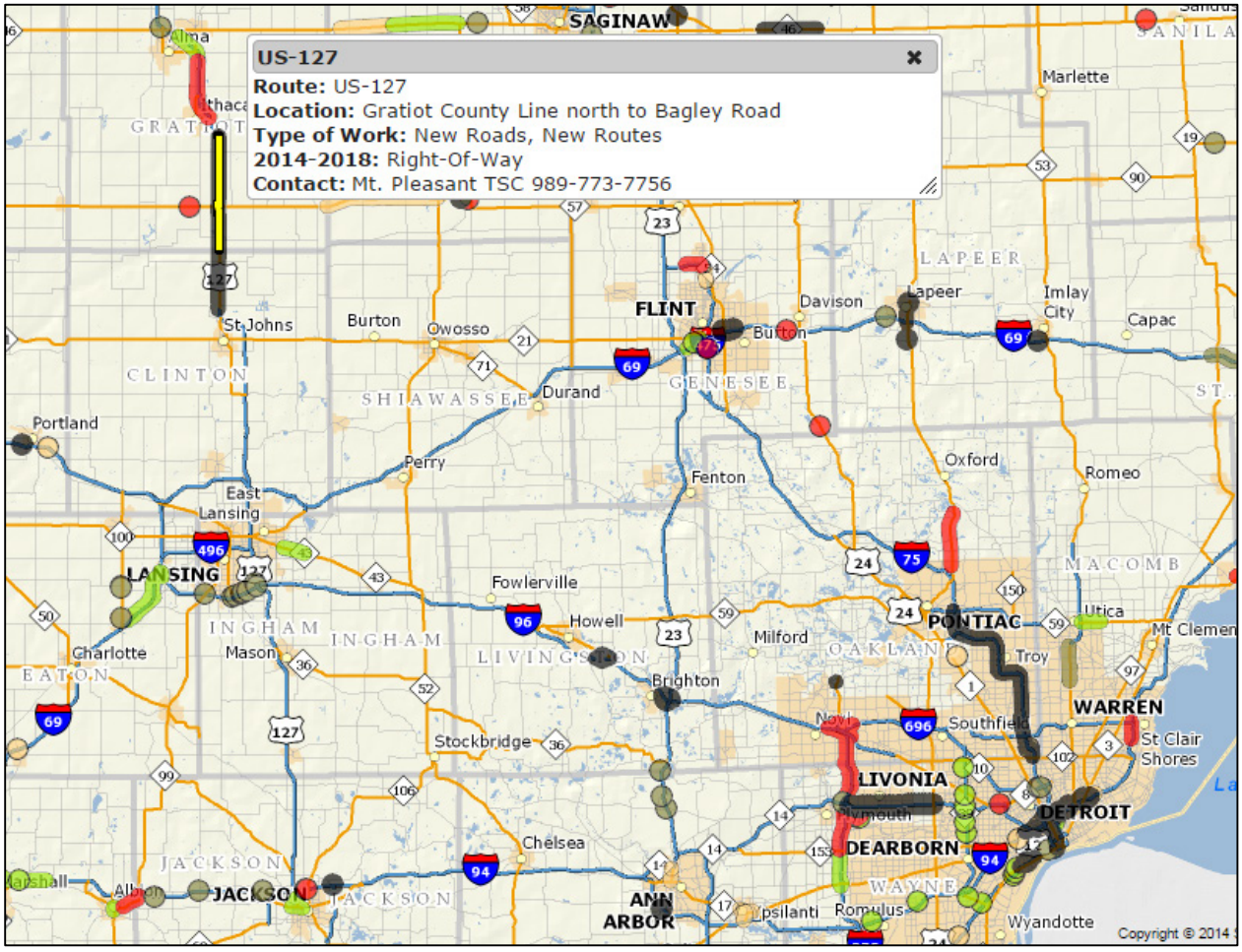

Figure 6: Screenshot of Michigan DOT's online STIP project mapping tool
SOURCE: MDOT Five Year Program Map

States exhibit varying approaches to providing enhanced communication of planning and programming processes in their STIPs. Some States include detailed descriptions of the STIP development process, how the STIP process fits within the overall statewide planning and programming process, and the various agencies' roles in these processes. These descriptions are often provided in narrative form with supporting graphics, and are either included as an introduction or appendix in the STIP document as in the Arizona DOT STIP. These narratives may also be included on the STIP website or in a companion resource, such Colorado DOT's Annual Project Priority Programming Process and STIP Development Guidelines.

States also use graphics to communicate details about transportation planning and programming processes. **Oregon DOT** includes a flow chart in its STIP that shows the STIP development process from goals and funding to STIP approval and a timeline with the roles of the key players (Figure 7).

Increased Transparency through STIP Narrative - Case Examples

Arizona DOT's STIP includes an introduction that defines the STIP in plain language and how it is linked to the planning and programming process. This narrative includes descriptions of the following:

- Linkages between the STIP and the statewide LRTP
- Elements of the project prioritization process including performance measures (when applicable)
- Processes that MPOs and Councils of Governments follow to develop their TIPs.

Colorado DOT (CDOT) provides a link on the STIP webpage to a document called the Annual Project Priority Programming Process and STIP Development Guidelines. This document explains CDOT's planning and programming processes, including details about TIP and STIP development and the key players involved.

Maryland DOT uses graphics to show the relationships between the STIP and other key documents in the statewide planning and programming process, such as the MPO TIPs and MTPs, the statewide LRTP, and the Consolidated Transportation Program (Figure 8). This type of information, effectively presented, not only encourages stakeholder and public understanding of the importance of the STIP, but also encourages public involvement in the broader planning process.

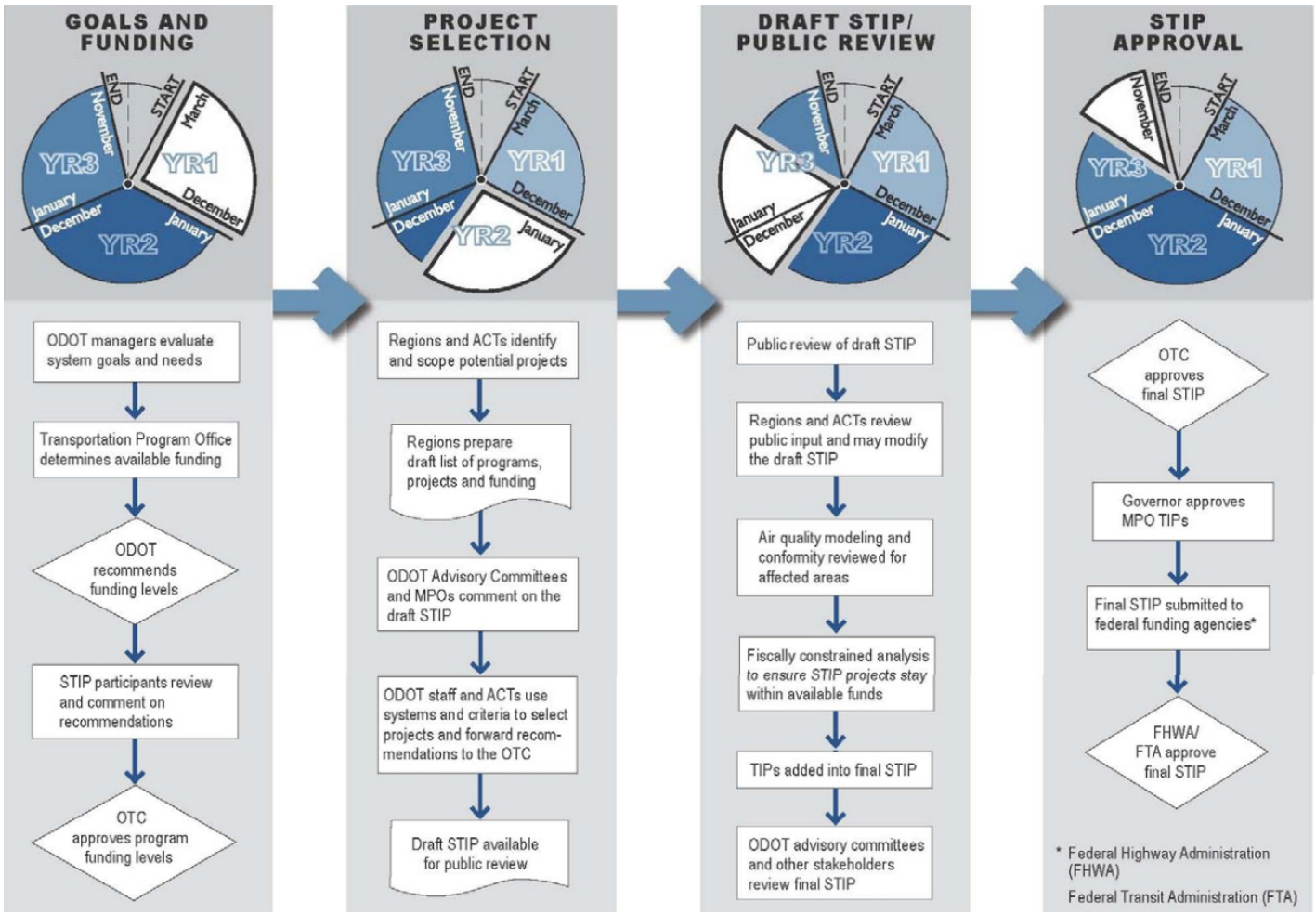

Figure 7: Oregon DOT STIP Development Process
SOURCE: [Oregon STIP Users' Guide]

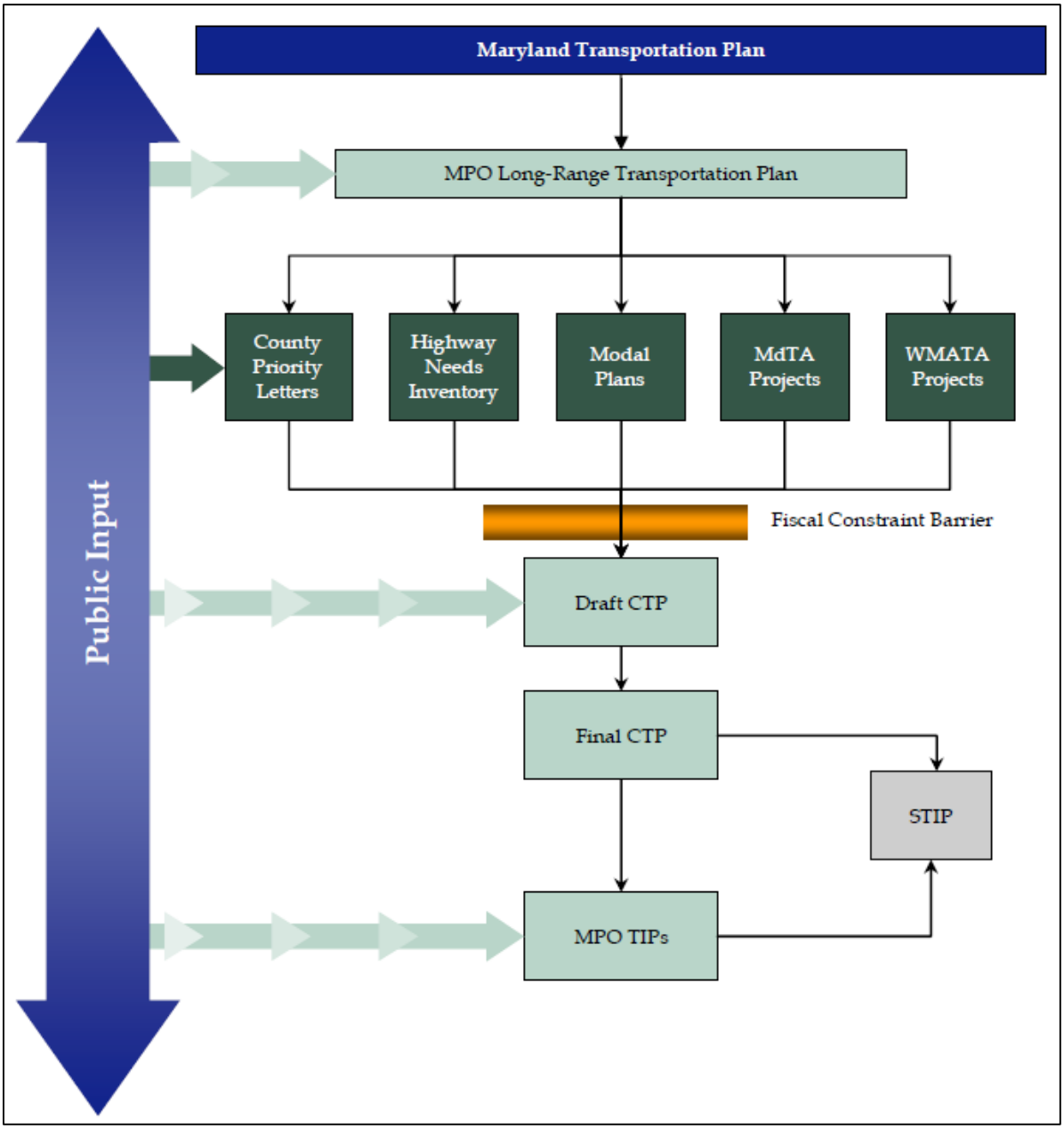

Figure 8: Maryland DOT Flow Chart Depicting STIP's Relationship to Other Documents in the Planning Process

SOURCE: Maryland DOT 2014 STIP

Another way that States enhance the transparency of their STIPs is by increasing the level of detail or formatting of the project list portion of the document to improve their ability to communicate information in easily-accessible ways.

Hawaii DOT uses a color-coding system to identify which project prioritization criteria are satisfied by the projects in its STIP. As shown in Figure 9, there are colored boxes on the left side of each row which represent the project prioritization criteria category that the project fulfills. The categories represented by each color are as follows:

- Green – System Preservation
- Purple – Safety Improvements
- Brown – Congestion Mitigation
- Pink – Modernization
- Orange – Enhancement, and Blue – Human Services Transportation Program

	PROJECT	PHASE	FFY2011 (Oct 1, 10 - Sep 30, 11) TOTAL (x$1000)	FEDERAL (x$1000)	LOCAL (x$1000)	FFY2012 (TOTAL (x$1000)
	STATEWIDE - FHWA					
S1.	Bikeway Improvements at Various Locations, Statewide	DES				
		ROW				
		CON				
	Estimated Total Project Cost - $2,700,000 -- Implementation of State bike projects identified on Bike Plans.					
S2.	Bridge Inspection and Appraisal	PLN	3,000	2,400	600	3,000
	Estimated Total Project Cost - $18,000,000 -- Inventory, inspect and appraise state bridges. Includes underwater inspection, scour analyses, surveys an					
S3.	Construction Career Days Workforce Development Program	PLN	30	30	0	30
	Estimated Total Project Cost - $180,000 -- Supplement the Construction Career Days Workforce Development Program					
S4.	Highway Research and Development Program	PLN	500	400	100	500
	Estimated Total Project Cost - $3,000,000 -- Supplement the Statewide Planning and Research Program					
S5.	Highway Safety Improvement Program (HSIP), Non - Infrastructure Funding Program	PLN/DES	500	400	100	500
	Estimated Total Project Cost - $3,000,000 -- Implement non-infrastructure scope of HSIP including safety education programs and PSAs.					
S6.	Highway Shoreline Protection, Statewide	DES				
	Estimated Total Project Cost - $3,000,000 -- Funding to implement shoreline protection projects as identified in the State's shoreline protection plan.					
S7.	Hawaii Statewide ITS Architectural Plan	PLN				1,000
	Estimated Total Project Cost - $1,000,000 -- Develop ITS Architechure Plan for Non-Metro areas of the State (neighbor islands).					

Figure 9: Screenshot of Hawaii DOT's STIP with color-coding based on fulfillment of project prioritization criteria
SOURCE: Hawaii DOT 2015 STIP

Wyoming DOT includes project maps in its STIP at the beginning of each district's project list that shows the location of all of its projects. It is color-coded by project type and project numbers are included. Figure 10 shows an example of one of the project maps.

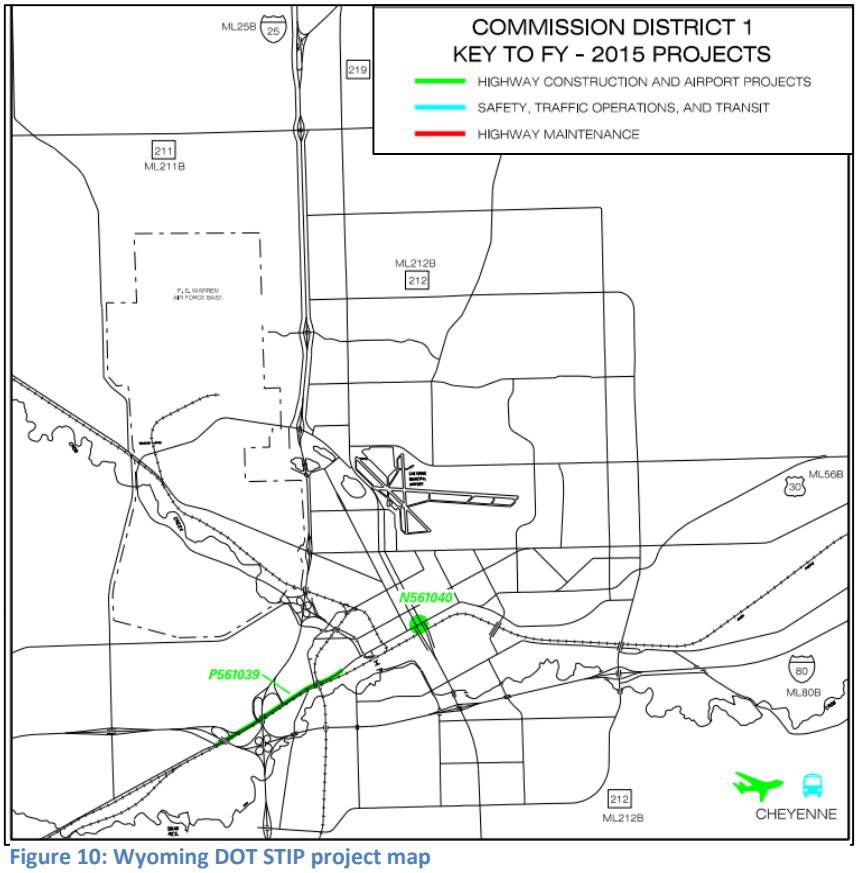

Figure 10: Wyoming DOT STIP project map
SOURCE: Wyoming DOT 2015 STIP

Kansas DOT has an interactive project and program delivery website called T-WORKS. The website is based on the 10-year multimodal transportation program of the same name. There is an interactive map that displays programmed projects. Users can click on a project name below the map or on the map itself to access details about a specific project, including location, project type, scope, estimated start and end dates, and project costs. Users can search for projects by county, route, district, or keyword. Figure 11 provides an example screen shot of T-WORKS.

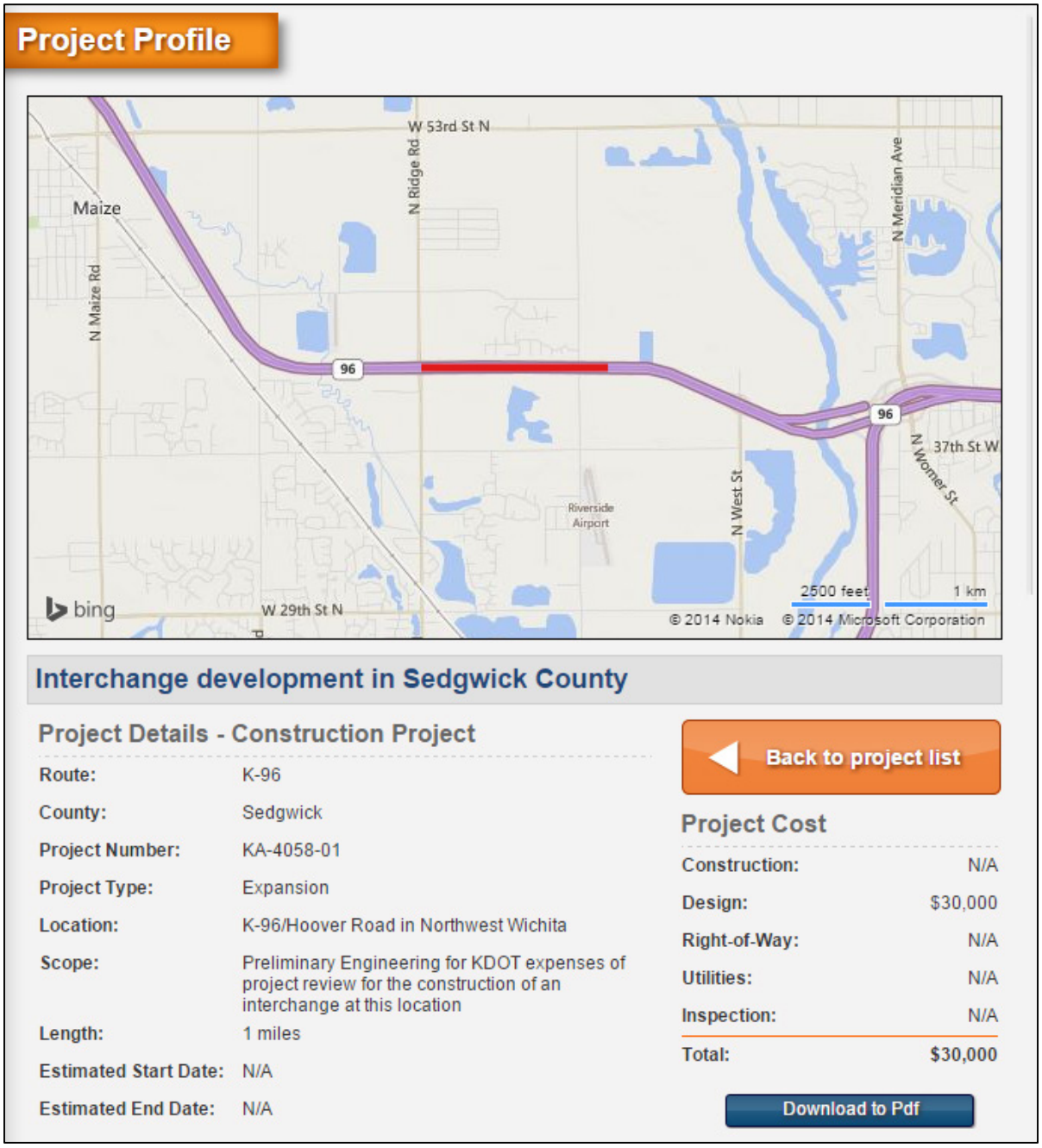

Figure 11: Kansas DOT's project/program delivery site T-WORKS
SOURCE: Kansas DOT T-WORKS Interactive Project Map

Some States also minimize the use of abbreviations and industry jargon which, while commonly understood by transportation professionals, may not be accessible to a general audience. By including project descriptions in plain language and commonly-understood layman's terms, States improve the ability of interested parties and the public to understand the content of their STIPs, and thus improve the ability of the public and stakeholders to participate in the on-going statewide and metropolitan planning processes.

Many States also provide easily searchable and sortable versions of their STIP online as an electronic or "eSTIP," in addition to a printable Adobe PDF or Microsoft Word document. eSTIPs are a particularly effective mechanism for coordinating the development of a STIP in a common format. These interactive systems provide automatic data validation and database functions for modifications and updates, while also enforcing agreed-upon standards across all jurisdictions. For more information about eSTIPs, see the Transportation Planning Capacity Building Program's eSTIPs case studies series (links provided in Appendix B). Some of these eSTIPs are for official use only, such as in the case of New York. Others are publicly available, such as the eSTIP provided on the **Alaska Department of Transportation and Public Facilities** (DOT&PF) website. A sample screen shot is shown in Figure 12.

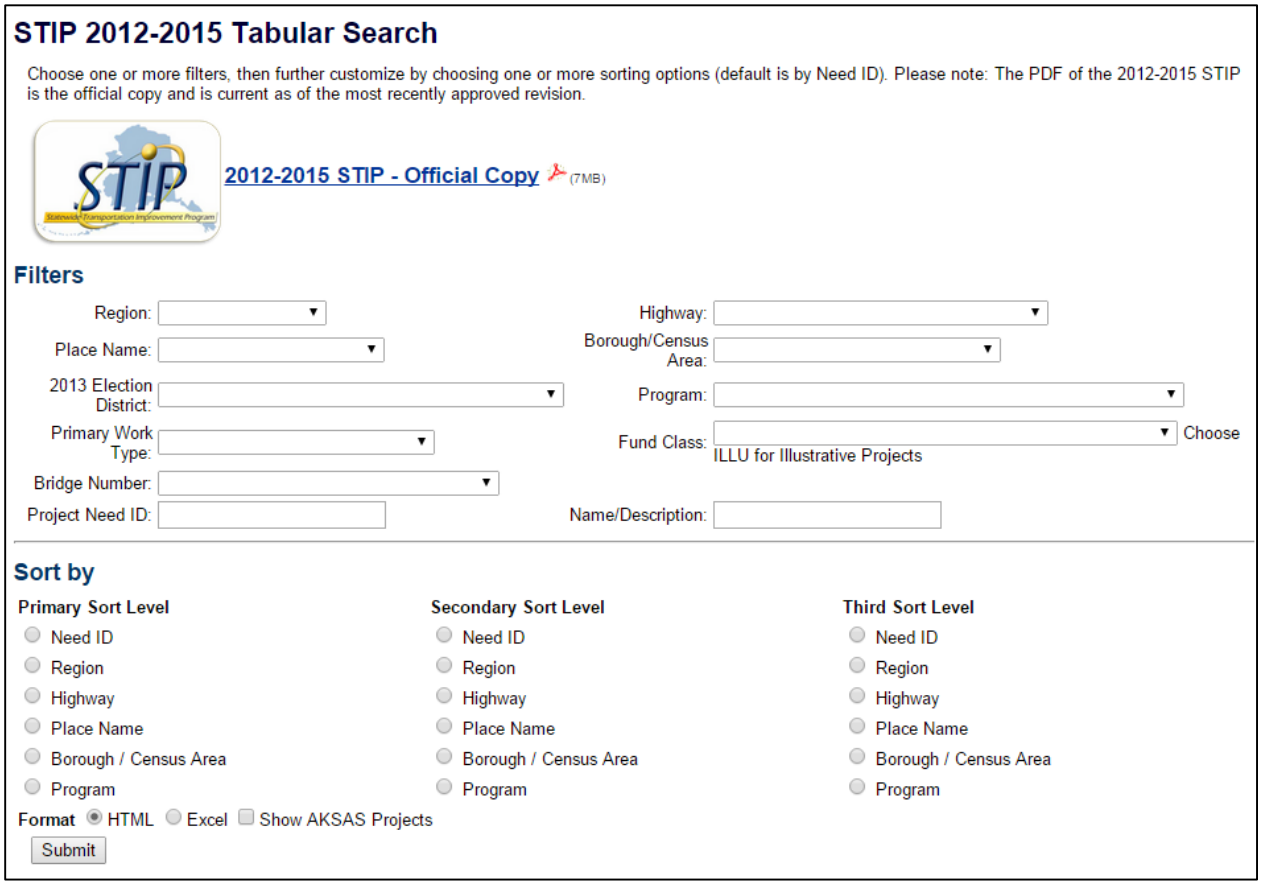

Figure 12: Alaska DOT&PF's searchable STIP database
SOURCE: Alaska DOT&PF searchable eSTIP

It is also notable that several States have made additional documents and materials related to the STIP easily available to the public, introducing helpful transparency to the complex programming process. These resources may include hyperlinks in the STIP document or on the STIP website to related documents such as the LRTP, MPO TIPs or metropolitan transportation plans (MTPs), local government investment plans, modal plans, asset management plans, the State highway safety plan (SHSP), or others. For example, the **Rhode Island DOT** STIP contains embedded links for each document referenced in the STIP Introduction, including the LRTP, State Guide Plan, and public involvement materials.

STIPs and Performance Management

Many States use an asset management component or some other performance basis in the project selection or programming process. Individual projects within the STIP may be linked to general priority areas or more specific performance goals that are also featured in the statewide LRTP and MTPs. These linkages may not be explicitly shown in the STIP project list, but may be evident through descriptions of the project selection process in the STIP narrative. For example**, Maine DOT, New Jersey DOT, and Michigan DOT** each discuss project selection and prioritization processes in the STIP narratives which include asset management considerations.

Evidence of Performance Management Orientation in STIPs - Case Examples

Montana DOT describes a process that allows district and program managers to nominate projects for the STIP, which are then prioritized and ranked by modeling asset management performance with regards to pavement condition, congestion, bridge condition, and safety.

Hawaii DOT assigns color-coded project prioritization categories to each project in its STIP (see Figure 9). Although the STIP and supporting documentation do not describe the use of the STIP in performance management, the practice of assigning projects to selection criteria (which are in-turn linked to goals and objectives) suggests a performance management orientation.

Some States have developed quantitative approaches to project selection that translate statewide performance goals into project scores or rankings. For example, **North Carolina DOT (NCDOT)** collaborates with MPOs, rural planning organizations, and state highway divisions as part of a legislatively-mandated statewide process to allocate transportation resources based on data-driven scoring and local input.[10] The agencies look at existing and future conditions, expected benefits, and the multimodal characteristics of each project and how it fits with local priorities. NCDOT then scores and ranks all of the projects across the State based on scoring criteria and weights included in State law. [11] Once projects are prioritized, their impact on system performance is determined using a Level of Service analysis. The results of this prioritization process become inputs to the NCDOT's Program and Resource Plan, and the most needed projects are advanced into the STIP.

California's STIP guidelines are developed by the California Transportation Commission (CTC), a State-appointed body responsible for programming highway, passenger rail, and transit project in the State. The guidance details the State's performance-based programming process, which works on parallel paths at the regional (primarily MPO-driven) and interregional (primarily county and State-driven) levels. According to this guidance, Caltrans, MPOs, and local transportation authorities must monitor the performance of transportation systems and projects, and provide performance forecasts for use in evaluating the regional and interregional TIPs. Each RTIP and ITIP submitted to the CTC must include a report on its overall performance and cost-effectiveness which demonstrates how effective the RTIP or ITIP is forecasted to be in addressing or achieving the goals, objectives, and standards which are established in the long range planning process. The CTC considers these performance evaluations when reviewing and commenting on the RTIPs and ITIPs.

[10] NCDOT Strategic Transportation Investments Webpage

[11] North Carolina Board of Transportation – Prioritization 3.0 Scoring Criteria, Weights, and Normalization

California Transportation Commission Performance Measures and Cost Effectiveness Metrics - Case Example

The California Transportation Commission STIP Guidelines list the following performance measures and cost-effectiveness metrics used in evaluating proposed projects for inclusion in the STIP.

- Change in traveler, freight and goods travel time or delay
- Decrease in travel, freight and goods time per thousand dollars invested
- Change in accidents and fatalities
- Decrease in accidents and fatalities per thousand dollars invested
- Change in vehicle and system operating costs
- Decrease in vehicle and system operating cost per thousand dollars invested
- Change in access to jobs, markets and commerce
- Improved access to jobs, markets and commerce per thousand dollars invested
- Change in frequency and reliability of rail/transit service
- Increased frequency reliability of rail/transit service per thousand dollars invested
- Change in air pollution emissions including greenhouse gas emissions
- Decrease in air pollution emissions per thousand dollars invested
- Change in passenger, freight and goods miles carried
- Increase in annual passenger, freight and goods miles carried per thousand dollars invested
- Change in vehicle miles traveled
- Decrease in vehicle miles traveled per thousand dollars invested

Some States are also using performance measures to compare the outcomes of executed projects to statewide transportation plan and MTP goals and objectives. For example, **Maryland DOT** publishes an Annual Attainment Report on Transportation System Performance (Attainment Report) which demonstrates progress towards achieving statewide goals and objectives, linking them to the program of projects delivered through the STIP and to transportation projects which were not federally funded. The Attainment Report is one of three key statewide planning documents that make up Maryland's State Report on Transportation (SRT). The other two components are the Maryland Transportation Plan (MTP) and the Consolidated Transportation Program (CTP). The MTP establishes a 20-year vision for the State's transportation system and sets strategic goals and objectives that guide the development of the CTP. The CTP is a constrained six-year capital program that contains both federally-funded projects and

non-federally-funded projects. The Attainment Report measures the progress toward achieving the goals and objectives of the MTP and the delivery of the CTP.

The Maryland DOT Attainment Report is organized according to the goals set in the MTP. Each goal has several performance measures associated with it. Each performance measure is attributed to one or more of Maryland's State transportation agencies which have responsibility over aspects of the State's transportation system performance. The Attainment Report includes a performance graphic for each measure that shows actual performance over time and the target that the State wishes to achieve. Figure 13 below is an example showing traffic fatalities on all roads in the State.

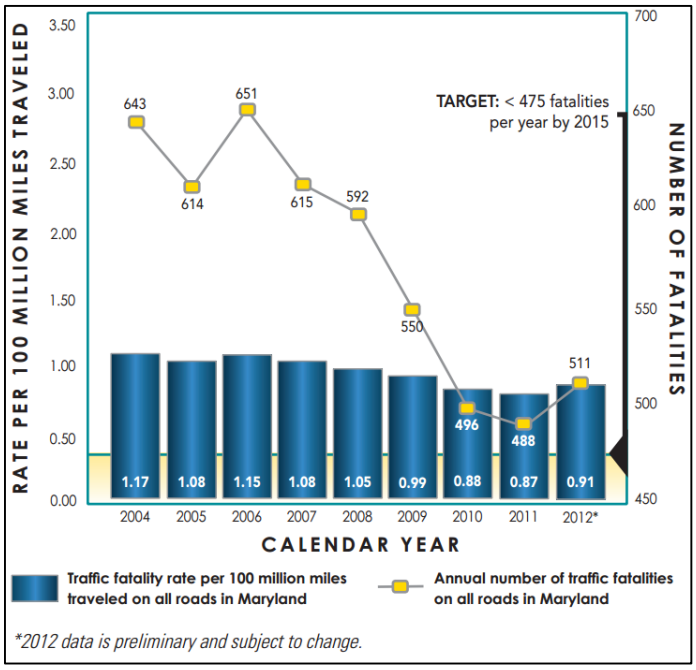

Figure 13: Annual number of traffic fatalities on all roads in Maryland
SOURCE: 2014 Annual Attainment Report on Transportation System Performance

Some State DOTs track and report performance measures for project and/or program delivery, which may explicitly reference the delivery of the STIP. These performance indicators may be presented as a written report or an online dashboard.

New York State DOT (NYSDOT) explains its use of performance measures in its Capital Program Proposal document, which is a five-year capital program for highways, bridges, passenger and freight rail, transit, ports, and airports. NYSDOT monitors the performance of its investments using measures that focus on delivering transparency and accountability. The performance measure categories include bridge and pavement condition, percentage of contracts with disadvantaged business enterprises and minority and women-owned business enterprises, safety, preventive maintenance, and modal measures that focus on transit and rail. The agency is also monitoring the transportation system for sustainability indicators related to environmental stewardship, community livability, and economic competitiveness. NYSDOT also has a performance measurement webpage that includes performance dashboards such as the one shown in Figure 14.

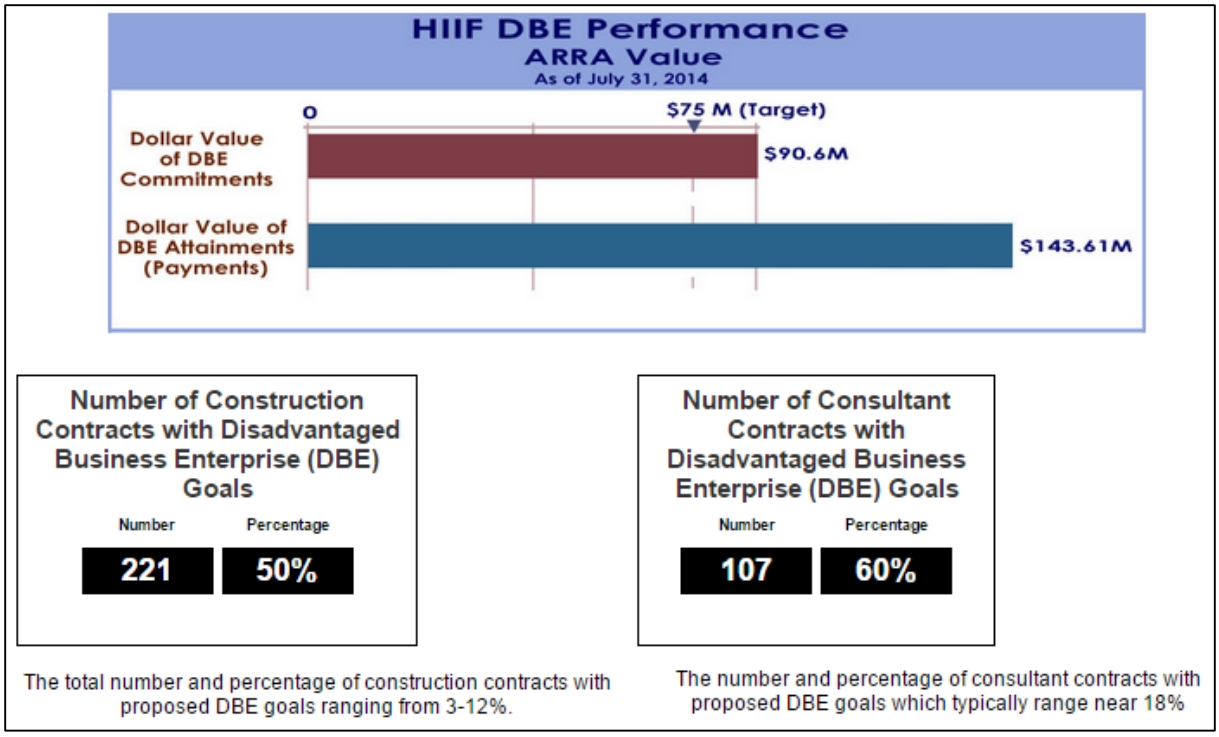

Figure 14: NYSDOT performance dashboard
SOURCE: NYSDOT Goals, Accomplishment, and Performance Metrics

An example of online graphical performance reporting from **Kansas DOT** is shown in Figure 15. The agency has a performance reporting website that shows dashboards for safety, bridge condition, pavement condition, program delivery, operations, and transit. Both graphics report actual performance over time as well as a time-bound target. A link to the performance reporting website is available on T-WORKS, Kansas DOT's interactive project and program delivery website.

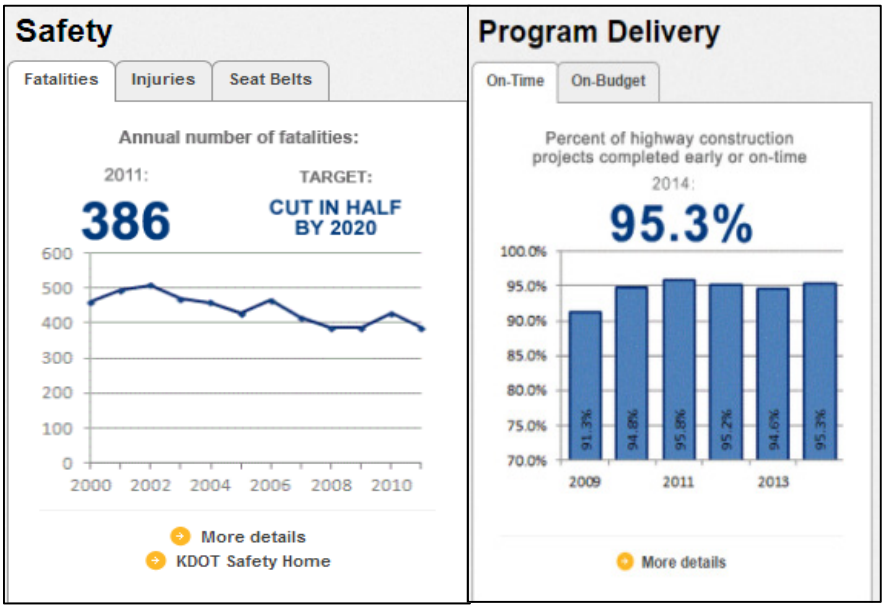

Figure 15: Kansas DOT's Performance Dashboard
SOURCE: Kansas DOT Performance Measures

Advancing State Transportation Policy Goals

An emerging practice in the STIP process is the use of STIPs as a tool to advance and gauge progress toward State policy goals, such as reducing greenhouse gas emissions or managing financial resources.

In 2008, **California** passed the Sustainable Communities and Climate Protection Act, which supports actions to reduce greenhouse gas emissions throughout the State using coordinated transportation and land use planning. The law requires each of the State's MPOs to develop a sustainable communities strategy as part of its regional transportation plan. According to the CTC STIP Guidelines, each region in California with an adopted sustainable communities strategy needs to include in its Region TIP (RTIP) a discussion of how the RTIP relates to its sustainable communities strategy. The description must include a qualitative or quantitative assessment of how the RTIP will support the implementation of the policies and projects in the sustainable communities strategy.

Arizona DOT develops its STIP using its 25-year capital investment strategy, called the Recommended Investment Choice (RIC) as a guide. The RIC is fiscally constrained and recommends preserving and modernizing the existing highway system while limiting investment in the expansion of new highway facilities. The statewide LRTP presents various scenarios that are built from the RIC, including a baseline scenario and a "full state needs" scenario. According to its 2015-2019 STIP, Arizona DOT is in the process of assessing its programming policies and practices to develop a direct connection between the RIC and the State's programming process.

V. A Theoretical "Model STIP"

If the examples of STIP practices presented in this white paper reflect the general direction States are moving in, we can combine various aspects of these innovations and trends to help understand different ways STIPs might further evolve over the coming years. To assist State DOTs in envisioning one possible way that STIP practices may evolve, and to provide ideas to consider, we describe a theoretical "Model STIP" below. This model is provided not as a prescriptive ideal or preferred approach, but as "food for thought," offered as a resource to assist State DOTs as they continue to innovate and advance their statewide transportation planning and programming practices to ensure that the STIP is a significant component of the planning process.

In this model, enhancements are organized by the three stages identified earlier in the lifecycle of the STIP: 1) STIP Development, 2) STIP Document, and 3) STIP Use.

Model STIP Development

States employ a variety of techniques to manage the complexity of STIP development, often building in opportunities for States, MPOs, and local jurisdictions to work together in program development at the regional and local levels prior to STIP development. The Collaborative and Graduated models appear to demonstrate a greater degree of State DOT involvement in the planning and programming processes at regional and local levels. These opportunities for back-and-forth iteration appear to provide important opportunities for alignment between the STIP, TIPs, and related investment plans as DOTs work with

MPOs and local jurisdictions to achieve balanced programming that advances statewide and local goals in combination. This may provide important opportunities for public and stakeholder participation and input to the programming process because it allows input at one level of development to affect other levels through established coordination processes.

States using the Connective Model may also employ enhancements in the STIP development process which improve coordination among jurisdictions without iterative back-and-forth interaction throughout the process. Instead, States might focus coordination at either the beginning or end of the programming process. For example, States may invest greater efforts in coordinating the development of the statewide transportation plan or a vision plan (early stages of coordination), or they may establish project selection and programming criteria which help guide the project selection processes of MPOs and others (later stages of coordination). In these ways, improved coordination might be implemented from the "top-down," but with cooperation among the parties to develop the top-down framework.

Elements of Model STIP Development:

- State engagement in MTP and TIP development
- Opportunities for back-and-forth iteration between State DOT, MPOs, and others throughout the process
- State engagement with non-urbanized areas in program development, including the provision of technical assistance
- Cooperative development of top-down elements
- Increased usage of eSTIP technology to coordinate plan development
- Public and stakeholder input at all levels of the process

Model STIP Document

States are structuring STIPs and associated processes and planning products to improve transparency and to enhance communications with the public. By including descriptive text and graphics in the introduction to the STIP, State DOTs put the STIP document in the context of the overall statewide planning and programming process. Providing this level of information in the document or on the website where readers often access the STIP helps the reader understand what in the past may have been a complex and seemingly unapproachable technical document. By employing a common format across all jurisdictions, increasing the level of detail provided, and minimizing the use of industry jargon and acronyms, the STIP can be easier for stakeholders to understand.

Elements of Model STIP Documents:

- Provides context of where the STIP fits in the overall statewide transportation planning and programming process
- Uses a consistent format for all projects, regardless of source, mode, or jurisdiction
- Project descriptions provide sufficient level of detail for members of the public to understand and use simplified language with minimal acronyms
- Supporting and related documentation are referenced and linked-to within the document and available on the STIP website

Model STIP Use

States are also implementing enhanced uses for the STIP to support transparency and performance management goals. The STIP remains at its core the medium through which the State DOT, MPOs, and other jurisdictions document the program of projects which results from the statewide transportation planning and programming process. However, States use the STIP to advance broader State planning goals as well.

The STIP can be a powerful vehicle for promoting transparency and communication with the public about transportation decisions. Websites and interactive maps are particularly important tools for State DOTs in helping the public visualize the projects included in the STIP and for communicating the expected impacts of the program. States are able to increase public engagement and understanding by displaying the location and timing of projects included in the STIP, both during review and comment periods, and after STIP approval. These visual aids assist the public in understanding how Federal transportation funds are programmed in the State and what projects are planned over the next several years.

As performance management regulations are finalized and implemented, State DOTs may increasingly integrate their STIPs as key elements of an overall performance-based planning and programming approach. Many States have already begun to use the STIP to explicitly document linkages between projects and statewide goals. As statewide performance metrics and targets are defined, we can imagine that States may begin to link the estimated impact of individual projects or groups of projects on the State's quantitative performance in those goal areas.

The STIP may also become a key mechanism for tracking and communicating progress toward meeting statewide performance targets and goals. If State DOTs and MPOs are able to measure the actual impacts of projects once implemented, they may also be able to evaluate and refine planning and project selection processes so that decision-making better reflects the actual impacts of various programs and projects over time. Taken together, performance management enhancements in the STIP would likely improve States' abilities to effectively communicate to decision-makers and the public the likely future performance of the statewide transportation network in key goal areas.

<u>Elements of Model STIP Use:</u>

- Supported with web-based visualization tools or maps
- STIP used as a tool in performance-based planning and programming
    - Project selection process includes performance-based evaluation of projected benefits
    - Individual projects or groups of projects linked to performance metrics
    - Includes estimated impact of individual projects or groups of projects on performance targets
    - Includes forecasted aggregate impact of all projects on performance targets
    - Used to track progress toward meeting plan goals/targets
    - Used to evaluate/refine methodologies for estimating project effectiveness
    - Feedback loop into future planning and project selection

VI. Conclusion

The review of STIP practices presented in this white paper demonstrates how State DOTs are continuing to invent and apply diverse methods to develop STIPs, and to use STIPs to generate a variety of results. Many States develop STIPs that more clearly communicate the results of the complex transportation planning process to the public, using narrative descriptions and visual tools to improve the transparency and accessibility of the STIP. Some States have also begun to use STIPs to express anticipated outcomes as part of a performance management approach, or to address State goals such as sustainability, in addition to processes and goals identified in Federal requirements.

In this white paper, we have described these diverse STIP approaches in terms of three descriptive models for STIP development, each with their own unique characteristics and strengths:

- **The Connective Model:** representing States which focus their coordination with MPOs and local jurisdictions at one end of the program development spectrum

- **The Collaborative Model:** representing States which interact more regularly with MPOs and local jurisdictions, throughout all phases of the programming process

- **The Graduated Model:** representing States which have established a phased process for STIP development

We have also described a theoretical "Model STIP," which reflects many of the innovative practices the research team saw in the scan of all 50 State's STIPs and the more in-depth review of 18 selected STIPs. This theoretical "Model STIP" is presented as "food for thought," intended to describe possible directions in which DOTs may be moving with their STIP practices, based on innovations reviewed in this report.

It is our hope that by clarifying the range of practices used in the STIP development process, providing examples of peer approaches and innovations, and providing a potential future model to consider for a "Model STIP," this white paper will assist State DOTs, their planning partners, and stakeholders, to better understand the range of approaches used in the STIP process, and to identify peer examples and approaches they might adapt in their own STIP processes.

Appendix A: Summary Tables of STIP Research

Table 3: Results of 50 State Scan in Phase I

Agency	How are projects organized?	Observations	Link to Webpage	Link to STIP[12]
Alabama	County		Webpage	STIP
Alaska	Region	STIP Project Viewer; searchable STIP	Webpage	STIP
Arizona	Program	Priority Programming Process for Highways - project prioritization includes performance measures and evaluation of project attributes; STIP is 5-year document	Webpage	STIP
Arkansas	Sorted separately by state highway, local, statewide generic, transit, and Federal Lands		Webpage	STIP
California	County, then funding program	Has separate state STIP and Federal FSTIP; STIP guidelines describes use of PMs as a way to link goals and objectives in RTPs and interregional TSPs to the RTIPs and ITIPs; RTIPs and ITIPs make up the STIP	Webpage	STIP
Colorado	Region	has performance-based investment categories; each project notes the LRTP strategies that are fulfilled by the project; interactive project locator map	Webpage	STIP
Connecticut	Federal authorization code or project number	State recommends projects to MPOs, who review and edit to form TIPs. TIPs are then incorporated into STIP	Webpage	STIP
Delaware	County, then program	STIP is part of 6-year Capital Transportation Program	Webpage	STIP
Florida	Facility type	STIP is first 4 years of 5-year Work Program; has an e-STIP	Webpage	STIP
Georgia	Project #	describes "lump sum" funding categories and their criteria; website has link to EJ Identification and Proposed Outreach Report and STIP Annual Public Involvement Report	Webpage	STIP

[12] STIPs linked in Table 3 may not be the same versions reviewed during research for this report, which was conducted in January 2014.

Agency	How are projects organized?	Observations	Link to Webpage	Link to STIP[12]
Hawaii	Region	STIP document is color-coded based on the project criteria that each entry satisfies; project location maps; describes public participation process on STIP webpage with survey results and other materials	Webpage	STIP
Idaho	Separate documents organized by district, county/city, route, or program	includes development timeline, general items that guide project selection (performance-based), and lists agency goals	Webpage	STIP
Illinois	Program, then district	STIP webpage links to MPO info and LRTP and shows a separate multimodal TIP	Webpage	STIP
Indiana	DES#	Developing a capital project programming process that uses asset management; transit projects listed separately	Webpage	STIP
Iowa	Planning area, with FHWA and FTA separate	STIP development guidance; interactive map	Webpage	STIP
Kansas	County	In-depth description of programs and program financing	Webpage	STIP
Kentucky	County		Webpage	STIP
Louisiana	MPO area		Webpage	STIP
Maine	Municipality	STIP explains that the companion document, the Work Plan, contains: the process for the selection of projects; Work Plan webpage has a map viewer and interactive project viewer	Webpage	STIP
Maryland	Project type then county	STIP is part of 6-year Consolidated Transportation Program; CTP also includes projects that aren't Federally funded; Annual Attainment Report demonstrates progress towards achieving the goals and objectives of the MTP and the delivery of the CTP.	Webpage	STIP
Massachusetts	Highway and transit separate; then by year and program	Includes a "current project status" section; webpage includes links to modal plans	Webpage	STIP
Michigan	Fiscal year, then by county	STIP is 5-year Program based on asset management principles	Webpage	STIP

Agency	How are projects organized?	Observations	Link to Webpage	Link to STIP[12]
Minnesota	Group by ATP	Eight Area Transportation Partnerships (ATPs) consider local and state priorities when developing the Area Transportation Improvement Programs (ATIPs). ATIPs are compared to state goals and objectives and fiscal constraint, and when finalized, are included in the STIP; has searchable e-STIP	Webpage	STIP
Mississippi	Program		Webpage	STIP
Missouri	District then by county	Discusses project selection process but not criteria	Webpage	STIP
Montana	District	Performance Programming Process uses performance management system to help MDT make investments that are tied to pavement condition, bridge condition, congestion, and safety.	Webpage	STIP
Nebraska	Project number	STIP webpage has links to STIP guidance and PIP; STIP contains flow chart of transportation financing	Webpage	STIP
Nevada	Region, then by funding source	Work Program lists projects for current fiscal year	Webpage	STIP
New Hampshire	Jurisdiction	STIP is part of a 10-year Plan	Webpage	STIP
New Jersey	Alphabetical order	Asset management is used to program projects; LRTP provides the foundation for the Statewide Capital Investment Strategy that shaped investment priorities for the STIP.	Webpage	STIP
New Mexico	District then by project number	List of projects only	Webpage	STIP
New York	Region then project number	Capital Program Proposal (CPP) defines 5 guiding principles for investment priorities (safety, preservation, economic vitality, mobility, sustainability), as well as program development priorities (asset management, focus on customer expectations, performance management)	Webpage	STIP
North Carolina	Division then by funding category	STIP webpage links to Project Maps and Strategic Prioritization, Planning, and Programming documents; The Strategic Transportation Investments Law establishes the Strategic Mobility Formula, which enhances state infrastructure while supporting economic growth, job creation, and high quality of life. The Formula is a method for allocating funding that is data-driven and uses local input. The resulting project rankings feed into the STIP.	Webpage	STIP
North Dakota	District		Webpage	STIP

Agency	How are projects organized?	Observations	Link to Webpage	Link to STIP[12]
Ohio	District	STIP includes description of analysis to identify EJ populations; shows project maps with EJ population overlays	Webpage	STIP
Oklahoma	County	STIP webpage includes project maps and links to PPP; STIP is developed biennially in direct relationship to the currently approved 8 Year Construction Work Plan.	Webpage	STIP
Oregon	Region, then by county	STIP website has links to user's guide that talks about project eligibility and STIP development process, and in-depth info about the regulatory framework, program development process, incorporation of TIPs, and approval and adoption process	Webpage	STIP
Pennsylvania	County	STIP is part of 12-Year Program	Webpage	STIP
Rhode Island	Funding program	STIP webpage links to STIP evaluation criteria and guidance	Webpage	STIP
South Carolina	Funding program	6-year program	Webpage	STIP
Tennessee	District (highway and transit separate)		Webpage	STIP
Texas	Metro area (highway and transit separate)		Webpage	STIP
Utah	County or region	Webpage provides link to STIP development document, which includes a description of each element in development timeline and identification of responsible agency for each task	Webpage	STIP
Vermont	Project type		Webpage	STIP
Virginia	district then by project type	STIP webpage has links to TIPs; STIP is part of 6-year capital improvement program, which is presented as e-STIP	Webpage	STIP
Washington	MPO	STIP webpage has links to searchable STIP database and Tribal and Federal Lands TIPs	Webpage	STIP
West Virginia	County	STIP webpage has link to Interactive project map; STIP is 6-year program	Webpage	STIP
Wisconsin	County	STIP webpage has link to STIP PPP	Webpage	STIP

Agency	How are projects organized?	Observations	Link to Webpage	Link to STIP[12]
Wyoming	Transit separated and listed by MPO; highway listed by district	STIP webpage has link to flow chart explaining STIP development process; each section of STIP represents one district and has a construction map and preliminary engineering map; STIP is 6-year program	Webpage	STIP
Washington D.C.	Separated by surface, transit, or federal lands	STIP is 6-year program; STIP webpage has link to TIP database	Webpage	STIP
Puerto Rico	Urbanized area	5-Year Capital Improvement Program is basis for development of STIP	Webpage	STIP

Table 4: Observations from STIPs Examined in Phase II

State	STIP Development	STIP Document	STIP Use
Arizona	• Performance-based project prioritization based on LRTP and other sources • State involvement in development of TIPs and Regional LRTPs • Has an Indian Reservation Roads TIP (IRRTIP) that is incorporated into the STIP	• Explains STIP development process • Explains relationship to other documents: ○ Capital investment strategy ○ LRTP ○ 5-Year program • Projects listed by region or other lead agency • TIPs are appended one after another at the end of the document • Forest and National Park Service, Transit, and IRRTIP are also at end of document	• LRTP states that Plan performance measures are used to compare the outcomes of Plan implementation over time
California	• Every county in California is served by a Regional Transportation Planning Agency (RTPA), and every county with at least one urbanized areas is also served by an MPO. Each MPO and RTPA develops a Regional Transportation Plan, which is the basis for each RTPA's RTIP • Coordination between Caltrans and regional agencies to create STIP, Interregional TIPs, and Regional TIPs • State-based performance and cost-effectiveness criteria for ITIPs and RTIPs – each agency and Caltrans must provide a quantitative and/or qualitative evaluation of its RTIP or ITIP with respect to how well it meets performance indicators and measures in the STIP guidance	• STIP guidance and document itself explain STIP development process • Guidance applies only to State STIP, which includes projects that are not federally funded – California has a separate Federal STIP that includes all federally funded projects • Most projects in the State STIP are in the FSTIP along with other federally funded projects that are not subject to the state's programming process • Projects listed by county • FSTIP gives descriptions of lots of other documents: State Plan, RTP, SIP, 10-Year State Highway Rehabilitation Plan, State Highway Systems Plans, State Rail Plans, SHSP • FSTIP contains links to all the FTIPs • STIP guidance explains relationship to other documents: ○ ITSP ○ ITIP ○ RTIP ○ FSTIP	• Performance measures in STIP guidance allow regional agencies and Caltrans to demonstrate how the goals and objectives contained in each RTP or the Interregional Transportation Strategic Plan (ITSP) are linked to the program of projects contained in each RTIP and the ITIP. • Regional agencies and Caltrans monitor transportation systems and projects for performance and provide performance forecasts for use in evaluation of RTIPs and the ITIP • The overarching goal for using performance measures in the STIP is to continue a systematic and reliable process that all agencies can use to guide transportation investment decisions and to demonstrate the benefits of proposed transportation system investments.

State	STIP Development	STIP Document	STIP Use
Colorado	• STIP is consistent with financially constrained portion of long range plan • CDOT Regional Transportation Directors are involved in project selection and prioritization for TIPs • Rural Transportation Planning Regions (TPRs) do not develop TIPs, and work closely with CDOT to identify and prioritize projects for inclusion in the STIP. • Performance-based investment categories (safety, system quality, mobility, and program delivery) came from stakeholder engagement activities, and are linked to goals and objectives of LRTP and performance report • Transportation Commission conducts resource allocation process as part of the LRTP and/or STIP update cycle. Resource Allocation is the process by which reasonably expected revenue estimates are allocated by CDOT investment category and program, and then geographically distributed to the six CDOT Engineering Regions	• Project Priority Programming Process (4P) and STIP Development Guidelines is in Appendix • Contains projects proposed for funding through Title 23 and Title 49 • e-STIP available, where each project has a small location map that can be enlarged by clicking • Daily Summary STIP report is updated every day and accessible from link on CDOT Project Locator interactive map	• Performance report has program delivery performance measures • Has online performance dashboard
Hawaii	• The highways division guidelines for project prioritization prioritizes based on broad goal areas • State, MPO, and Honolulu's Department of Transportation Services collaborate to create TIP, which is incorporated into the STIP after being finalized • Highways division project selection criteria seem related to goals and objectives of LRTP, which were obtained through public outreach	• STIP project list is color-coded based on the highways division project prioritization criteria that each entry satisfies (system preservation, safety improvements, congestion mitigation, modernization, enhancement, human services transportation program, transit). • STIP webpage has links to project location maps in pdf format • Projects listed by either statewide, county, island, or City of Honolulu—separating FHWA and FTA projects among them	

State	STIP Development	STIP Document	STIP Use
Kansas	• Project selection priorities came from improved public participation process • 10-year transportation program is T-WORKS (STIP is 2-year cycle within T-WORKS) • T-WORKS considers engineering factors along with economic impact and local input when selecting projects • KDOT is piloting the Transportation Economic Development Impact System (TREDIS) to estimate the increase in jobs, income, and economic output for a region due to a transportation improvement	• Projects categorized as either preservation, modernization, expansion, or local construction • Document states that three guiding principles of LRTP (preserving transportation system, making travel safer, and supporting economic growth) are reflected in STIP projects and describes project selection process (including priority formulas) • Projects listed by county • Lists transit, Federal Lands and Tribal, Recreational Trails, and KDOT projects separately • Webpage has links to MPOs' TIPs	• T-WORKS website tracks transportation projects across the state • Small online performance dashboard includes program delivery
Maine	• STIP developed in cooperation with MPOs, other municipalities, and Regional Councils • Linked to Capital Work Plan • Transportation, Economic, and Land Use System (TELUS) - Scoring system used to select projects for STIP; criteria fall into four categories: economic development, quality of life, safety, and asset preservation.	• Intro of document calls STIP "the means for implementing the goals and objectives" of the LRTP • Projects listed by town • Lists FTA, Indian Reservation Roads and Federal Lands, and other projects of significance separately.	
Maryland	• Guided by five goals in the Maryland Transportation Plan (MTP) (quality of service, safety and security, system preservation and performance, environmental stewardship, connectivity for daily life), as well as MPO Plans • State, MPOs, counties, and City of Baltimore are involved in creating Consolidated Transportation Program, which essentially contains MPOs' TIPs • STIP is developed through a collaborative effort between MDOT's five Modal Administrations, the Maryland Transportation Authority, Washington Metropolitan Area Transit Authority, MPOs, local officials, and public	• Describes connection to MTP and CTP (CTP is primarily same as STIP, but includes projects that aren't federally funded) • Describes development process in detail, includes flow chart • Projects listed according to agency, with separate lists for bridge, bike/ped, aviation, BRAC, and projects for MDOT's Modal Administrations • MPOs' TIPs are separate • STIP includes Federal Lands Highway Program projects	• Annual Attainment Report on Transportation System Performance demonstrates progress towards achieving the goals and objectives of the MTP and the delivery of the CTP.

State	STIP Development	STIP Document	STIP Use
Michigan	• MPOs and MDOT have established an overall process for tying together the State Long-Range Plan, Five Year-Transportation Program, local long-range plans, and STIP/TIP documents and associated project lists (diagram available) • Rural Task Forces select projects in accordance with funding level determined by MDOT, which are typically grouped together in a single line of the STIP rather than listed individually. • Examples of project selection factors include: road and bridge conditions, safety regulations, public participation/outreach, job and economic growth, environmental stewardship, intelligent transportation systems, multimodal integration, and fiscal responsibility. • Asset management used to develop STIP and Five-Year Transportation Program • Investment planning is tied to goals. Dollars are assigned to program categories, such as road and bridge preservation, safety, and capacity improvements	• Describes relationship to other documents and development process, including project selection process • Provides vision statements, goals and objectives, and key strategies from the LRTP • Projects listed by county • Provides links to 5-year plan, asset management plan, and State Highway Safety Plan	• Implementation of the state's long-range plan and Five-Year Transportation Program is accomplished through a four-year STIP. The 5-Year Transportation Program contains current multimodal investment strategies, as well as a list of specific road and bridge projects to be undertaken during this time frame. Online tool maps all projects in 5-Year Transportation Program • Performance report includes program delivery accountability measures
Minnesota	• STIP development involves stakeholders at all levels of government. • Eight Area Transportation Partnerships (ATPs) consider local and state priorities when developing the Area Transportation Improvement Programs (ATIPs). ATIPs are compared to state goals and objectives and fiscal constraint, and when finalized, are included in the STIP. ATPs are also expected to review and comment on the draft STIP. • STIP guidance describes the connection between the Statewide Transportation Plan (STP) and strategic plan as driving programming and project development and providing the foundation for	• Has a searchable e-STIP • Projects are listed by MnDOT District/Area Transportation Partnership (ATP) • Document provides good flow chart describing investment process	• STIP is subjected to project selection process that chooses what will be implemented in the first year of the STIP. Preferred funding sources and goals/objectives of the STP are considered first. Priorities include: preservation over replacement and expansion, safety, and high-priority/low-performing interregional corridors • Has a performance measure that looks at the percentage of projects in the first year of the STIP that are let in the planned year

State	STIP Development	STIP Document	STIP Use
Minnesota (cont.)	the development of performance-based district, corridor, and modal plans.		• Annual Performance Report makes performance and investment predictions based on the current STIP and tracks STIP investment in safety, bridge construction and maintenance, and pavement preservation
Montana	• Projects are nominated by district and program managers and then prioritized and ranked by surface condition, rideability, traffic safety, and geometrics, consistent with Performance Programming Process (P3), which is MDT's asset management program. Each of the P3 goals (pavement condition, congestion, bridge condition, and safety) has a computer management system to evaluate the impacts of investment options and track actual performance of system. Funding is distributed based on a funding plan that predicts performance over time based on best estimates of available resources.	• STIP describes development process and connection to LRTP • Project listed by transportation commission • Mentions other projects programs (Tribal, Federal Lands, etc.) but does not include a project list for them	• According to the P3 document: Performance of system is tracked after investments are implemented to determine how well the investments are helping to meet the goals of Tran Plan 21 • STIP document states that it supports performance and policy goals of TranPlan 21, the statewide LRTP
New Jersey	• LRTP provides the foundation for the Statewide Capital Investment Strategy (SCIS) that shaped investment priorities for the STIP. SCIS links LRTP to STIP by connecting broad goals to investment choices • Asset management policy supports STIP, as well as the 10 year Capital Investment Strategy, the annual Transportation Capital Program, and the biennial Study and Development Program. Asset management approach is a set of program-level analyses that determine how well current and proposed capital programs achieve policy objectives	• The STIP has been expanded into a 10 year plan that is fiscally constrained based on holding federal resources flat for NJDOT with NJ Transit using a 4% rate of growth. • Document explains connection to LRTP and SCIS • Projects are listed in alphabetical order • All projects are attributed an asset management category that relates back to the SCIS • Lists NJ Transit projects separately	• Asset Management Performance Report has program delivery measures

State	STIP Development	STIP Document	STIP Use
New Jersey (cont.)	• NJDOT, NJ TRANSIT, and the MPOs analyze TIP project candidates according to regional and state objectives from state LRTP, MPO LRTPs, SCIS, and State Development and Redevelopment Plan. TIPs are then integrated into STIP		
New York	• NYSDOT collaborates with MPOs to create TIPs which are then included in the STIP. • Non-metropolitan projects in STIP are developed in consultation with affected non-metropolitan transportation officials and in cooperation with local governments • STIP is consistent with LRTP theme of system preservation and asset management. • Capital Program Proposal (CPP) defines 5 guiding principles for investment priorities (safety, preservation, economic vitality, mobility, sustainability), as well as program development priorities (asset management, focus on customer expectations, performance management)	• STIP Narrative explains past progress on and commitments to all the different components of the program: bike/ped, safety, State Energy Plan compliance, climate change plan, etc. • STIP states connection to LRTP, State Highway Safety Plan, and State Energy Plan • Has e-STIP for government access only • Guidance includes STIP development calendar and deliverable checklist • Projects listed by region	• NYSDOT monitors performance of investment programs through performance measures that are refined over time and are related to objectives from the 20 Year Needs Study, which identifies investments necessary to get to a "state of good repair" in 20 years
North Carolina	• STIP is generated by applying Multi-Year Resource Strategy (aka Strategic Prioritization Process), which is based on mobility, safety, and infrastructure health. This prioritization process occurs every two years and involves MPOs, RPOs (rural), and state highway divisions. Projects are evaluated by looking at existing and future conditions, the expected benefits, the project's multimodal characteristics, and how the project fits with local priorities. Projects are then scored and ranked across the state based on a quantifiable, data-driven approach. Once projects are prioritized, their impact on system performance is determined using the Level of Service analysis. The results of strategic prioritization become input to the Department's Program and Resource Plan, and the most needed	• STIP document is a list of the projects included in the Work Program and the Program and Resource Plan • STIP website has STIP development explanations and contains links to planning and programming docs • Projects listed by division	• According to the Policy to Projects document: Each strategic planning component also includes a performance reporting means, whether through dashboards, quarterly performance scorecards, dynamic reports, or direct employee supervision and program monitoring • "Executive performance measures" include STIP project scheduling measures

State	STIP Development	STIP Document	STIP Use
North Carolina (cont.)	projects move forward into the 5-Year Work Program. • The Strategic Transportation Investments Law establishes the Strategic Mobility Formula, which enhances state infrastructure while supporting economic growth, job creation, and high quality of life. The Formula is a method for allocating funding that is data-driven and uses local input. The resulting project rankings feed into the STIP.		
Oregon	• Three ways that projects can be eligible for STIP: ○ Come from needs lists ○ From direct applications for funding to fulfill a specific need ○ Projects that make significant changes to the system by adding capacity • Projects come from plans, management systems, or databases that monitor specific system needs • Some projects in the STIP are selected through a competitive process that uses an application and project scoring system administered by ODOT or a federal agency • For each STIP cycle, the Oregon Transportation Commission adopts eligibility and prioritization criteria for three programs: Modernization, Pavement Preservation and Highway Bridge. • ODOT is involved in developing MPOs' TIPs; then they are integrated into the STIP • Management systems for pavement, bridge, and safety, as well as the HERS tool, monitor highway conditions and help prioritize needs	• STIP is a project list • Projects are listed by region then by county • STIP User's Guide has a diagram that describes STIP development process and a table on participant responsibilities	• STIP user guide calls STIP a project scheduling and funding document, but says it may include planning and environmental studies that relate to potential construction projects. • Performance report contains some performance measures that are related to programming and delivery
Pennsylvania	• PennDOT is involved in helping to create each MPO's TIP, which is then incorporated into the STIP • PennDOT also works with RPOs (regional) to form a TIP for that region or county	• STIP is a project list • Separate STIP Executive Summary • STIP is first four years of a larger program document, the Twelve Year Program, which is	• Released first performance report in 2013; has program delivery PMs

State	STIP Development	STIP Document	STIP Use
Pennsylvania (cont.)	• Capacity expansion and new facility projects in STIP are consistent with the Mobility Plan (LRTP) and Planning Partner long range plans • Uses Decision Lens software to weight and prioritize projects based on asset management data • The Linking Planning and NEPA Screening Form is a tool for gathering valuable information from the planning phase to be used in the environmental review process to deliver a better defined and more predictable program.	updated every two years by the State Transportation Commission • Projects are listed by county	
Rhode Island	• STIP = TIP because there is only one MPO; State Planning Council acts as single MPO • TIP priorities include: completion of major projects; bridge rehabilitation, preventive maintenance, safety, congestion relief and environmental quality, and funding concerns • The State Planning Council's Transportation Advisory Committee works with the staff of the Rhode Island Statewide Planning Program, RIDOT, and the Rhode Island Public Transit Authority in developing a draft TIP. • Program selection criteria Scores mobility benefits; cost-effectiveness; economic development impact; environmental impact; degree of support to local and state goals and plans; and safety, security, and technology • LRTP says that it provides direction for the STIP	• Describes purpose of STIP • Projects are listed by program • Includes transit projects • Appendix contains program selection criteria for the traffic, bridge, and interstate programs	• STIP describe itself as the principal means for implementing goals and objectives of the State Guide Plan
Utah	• UDOT has some coordination with MPOs during development process • UDOT provides project evaluation criteria for MPOs to use when creating TIPs (e.g. mobility, system continuity, economic impacts, safety, air	• STIP is a project list • STIP webpage has links to further information • Projects listed by county • Development Process document provides description of each activity in timeline and the responsible agency for each task	• Webpage states purpose of STIP as the "official work plan for the development of projects through conception, environmental studies, right of way acquisition, planning

State	STIP Development	STIP Document	STIP Use
Utah (cont.)	quality impacts, environmental impacts, and system preservation)	• STIP webpage provides STIP timeline	and advertising for construction for all sources of funds" • Performance report contains performance measures that are related to programming and delivery
Wyoming	• STIP development flow chart indicates some collaboration with DOT and MPOs, but no further description is available	• STIP broken up into sections based on district. Each district has a construction map, preliminary engineering map, and the following types of projects: construction, construction & CE engineering, preliminary engineering, airport, and transit. • Section at the end of STIP for miscellaneous and statewide projects • STIP includes flow chart describing development process	• Strategic plan/balanced score card has performance measures related to programming and delivery • Stated purpose of STIP: “accounting document, plus a snapshot of expected projects and their timelines

Appendix B: Related Resources

FHWA Statewide Planning and Programming Resources

- FHWA Statewide Transportation Planning Webpage
- Trends in Statewide Long-Range Transportation Plans: Core and Emerging Topics
- State Long Range Transportation Plans Database
- Federal Aid Essentials: Projects and Statewide Planning Requirements (Video)
- Federal Aid Essentials: Projects and Statewide Planning Requirements (Companion Guide)

FHWA Performance-Based Planning and Programming Resources

- Performance-Based Planning and Programming Guidebook
- Model Long-Range Transportation Plans: A Guide to Incorporating Performance-Based Planning
- Performance-Based Planning Case Studies
- Performance-Based Planning for Small Metropolitan Areas

FHWA/FTA Transportation Planning Capacity Building Program – eSTIP Case Studies

- Caltrans
- New Mexico DOT
- North Carolina DOT

Appendix C: Acknowledgments

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