



Statewide Transportation Improvement Program Management (Dynamic e-STIP)

A TPCB Peer Exchange Event

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Host Agency: Wisconsin Department of Transportation (WisDOT)

National Peers: Eric Powers, New Jersey Department of Transportation
Jolene Herrera, New Mexico Department of Transportation
Jeff Flowers, Oregon Department of Transportation

Sponsoring Agency: Federal Highway Administration (FHWA)



U.S. Department of Transportation
Federal Highway Administration

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13. ABSTRACT (Maximum 200 words) This report summarizes proceedings of a virtual peer exchange sponsored by the Federal Highway Administration (FHWA) and hosted by the Wisconsin Department of Transportation (WisDOT) on August 10-11, 2021. The purpose of the peer exchange was to discuss ways to enhance processes and software capabilities in the management of the electronic Statewide Transportation Improvement Program (e-STIP). The event provided an opportunity for State departments of transportation across the U.S. to share experiences, lessons learned, successes, and challenges related to the topic. Specifically, participants discussed methods of improving the effectiveness and transparency of the STIP process while remaining dynamic and helping reduce State risks while meeting Federal requirements. The event was sponsored by FHWA through its Transportation Planning Capacity Building Program.			
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Contents

Peer Exchange Overview.....	1
Session Discussions.....	1
Opening Remarks.....	1
WisDOT Overview Presentation	1
New Jersey Department of Transportation (NJDOT): Software Adaptation and Integration (Without System Constraints)	2
Peer Presentation Notable Takeaways	2
Post-Presentation Discussions	3
Oregon Department of Transportation (ODOT): Software Adaptation and Integration (With System Constraints).....	4
Peer Presentation Notable Takeaways	4
Post-Presentation Discussions	4
New Mexico Department of Transportation (NMDOT): Vendors for Interface	5
Peer Presentation Notable Takeaways	5
Post-Presentation Discussion.....	6
Conclusion and Key Takeaways	6
Appendices.....	8
Appendix A: Key Contacts	8

Peer Exchange Overview

This report highlights the presentations, discussions, and key takeaways from the “Statewide Transportation Improvement Program Management (Dynamic e-STIP)” virtual peer exchange, held over two half-days on August 10-11, 2021. The event was sponsored by the Federal Highway Administration (FHWA) through its Transportation Planning Capacity Building (TPCB) program, led jointly with the Federal Transit Administration (FTA). The event was held at the request of the Wisconsin Department of Transportation (WisDOT), in partnership with the FHWA Wisconsin Division (FHWA-WI), to bring together peers from across the country to discuss ways to improve the STIP process, as well as opportunities for further coordination.

The peer exchange featured four main sessions led by WisDOT, the New Jersey Department of Transportation (NJDOT), the Oregon Department of Transportation (ODOT), and the New Mexico Department of Transportation (NMDOT). Each peer session ended with a facilitated discussion, and the peer exchange closed with a reflective session during which participants focused on next steps and shared what they learned and what they would take back to their respective agencies.

Session Discussions

Opening Remarks

Representatives from the FHWA Office of Planning, FHWA-WI, and WisDOT provided opening remarks, recognizing that the purpose of the peer exchange is to share information about different State DOTs’ e-STIP efforts to improve transparency and efficiency.

The FHWA noted that the [TPCB website](#) hosts a variety of other valuable resources for the transportation planning community, including summary reports from TPCB peer exchanges, case studies, and past research.

WisDOT Overview Presentation

WisDOT’s goal in organizing this peer exchange was to learn from other State DOTs about their e-STIPs—the development process; the use of various systems, platforms, and third-party vendors; and any system constraints to which the State DOTs are confined. WisDOT emphasized this peer exchange as a discovery process. The system that WisDOT currently uses could be considered automated, but the goal is to make it more dynamic. WisDOT noted that it considers a “dynamic” e-STIP to be one that:

- Continues to include Transportation Improvement Programs (TIPs) by reference;
- Improves user interface for STIP updates and amendment reviews and approvals, including the ability to download reports or datasets to meet operational goals;
- Provides real-time project data;
- Provides read-only access to FHWA-WI and metropolitan planning organizations (MPOs); and
- Provides appropriate access to MPOs to instill greater ownership in the TIP/STIP process.

WisDOT highlighted three questions for all participants to keep in mind during the event:

1. How does the e-STIP processes differ between States?
2. How does the e-STIP provide transparency to stakeholders and the public?
3. Does the e-STIP involve third party vendors?

Before transitioning to peer presentations, WisDOT presented an overview of its current e-STIP process to provide peers with a foundational understanding of the existing WisDOT program. WisDOT uses an internally-developed, web-delivered planning application called the Financial Integrated Improvement Programming System (FIIPS) to facilitate the business process of planning, scheduling, estimating funding, and tracking changes to highway improvement projects. FIIPS is the data source for WisDOT's annual STIP, monthly STIP amendments, and the new online STIP mapping. Region staff are primarily responsible for entering and maintaining project records, with help from Bureau of State Highway Programs (BSHP) Finance staff. Additionally, WisDOT uses the State-deployed accounting system, PeopleSoft.¹

New Jersey Department of Transportation (NJDOT): Software Adaptation and Integration (Without System Constraints)

This session featured a representative from NJDOT to discuss the agency's e-STIP, which, while not entirely unconstrained, has fewer system constraints than WisDOT.

NJDOT provided an overview of their organizational structure, and discussed the software and data warehouse used for NJDOT's e-STIP process. More information about NJDOT's e-STIP is available [here](#).

Peer Presentation Notable Takeaways

- The e-STIP enables NJDOT to better align projects so that projects can occur at the right time with the right funding and the right process.
- NJDOT uses an online platform for the public to access the approved STIP. NJDOT also uses an internal site known as E-CAP to manage interim STIP activities. The E-CAP has restricted access for NJDOT staff and allows users to conduct manual entries, print necessary reports, and auto-generate particular State Capital Program and STIP information.
- NJDOT worked with the New Jersey Institute of Technology (NJIT) to help develop its e-STIP, which reduced burden on staff.
- NJDOT tailored its e-STIP to meet its business needs and leverage available resources. Agencies considering the development of an e-STIP should keep in mind their goals for the system as well as any considerations that may impact the direction of the e-STIP development.
- One difficulty that can arise is coordination between federal and State systems as they may operate on different fiscal years. In addition, federal and State Financial Management Information Systems (FMIS) are not always aligned, which can further complicate the process.

¹ References to various tools in this report do not represent an endorsement. FHWA recognizes that many tools are available and encourages agencies to use the tools that work best for them.

Post-Presentation Discussions

A facilitated discussion led by WisDOT followed the NJDOT peer presentation:

Could you elaborate on the Geographic Information Systems (GIS) component?

- The NJDOT e-STIP platform includes a GIS/mapping component so that users can view visually where proposed projects in the STIP are located. NJDOT noted that including this component did not require significant additional work, and user feedback has been positive.

How is restricted access to the e-STIP managed by NJDOT?

- The NJDOT Division of Capital Investment and Program Coordination extends permission to relevant staff at New Jersey Transit (NJ Transit), local MPOs, and FHWA by emailing them a password that provides them access. NJDOT staff periodically review who is on the list to ensure that it is up-to-date.

Is NJDOT's e-STIP entirely web-based, or are any additional applications required?

- The NJDOT e-STIP is entirely web-based. While this was challenging to establish initially, the current system has proven to be extremely useful, especially during the current period of remote work. The IT department at NJDOT ensures that the network remains secure.

Are NJDOT staff members manually doing data entry, or is there an automated process?

- NJDOT performs most of its work manually, particularly to ensure that payments are processed appropriately for complex transactions.

Could you elaborate on how NJDOT coordinates with its local transit agency and MPOs?

- NJ Transit can initiate a modification or amendment to the STIP if needed, but they usually work with MPOs, which typically initiate such actions. NJ Transit typically leads its processes and planning independently; NJDOT notifies NJ Transit of funding availability, and NJ Transit then provides information for NJDOT's inclusion in the STIP.
- MPOs use a separate process for preparing their TIPs. NJDOT then incorporates the TIPs in the STIP by reference.

How long did it take to develop NJDOT's current e-STIP system?

- Development of the e-STIP took about six to eight years. Initial development took a year. The e-STIP started as a Microsoft Access database, but NJDOT transitioned to using Oracle to meet business needs. As programming needs changed, NJDOT adapted and developed its E-CAP.

What advice does NJDOT have for agencies developing their e-STIP?

- Off-the-shelf solutions may have limitations and require agencies to adapt to the existing options, rather than having solutions that are responsive to agencies' specific needs. Agencies may therefore need to use additional time or resources to further modify the systems to best fit their needs.
- While NJDOT's approach was relatively simple, it ensured that staff and core business needs were met. In the development of the e-STIP, NJDOT and NJIT conducted extensive interviews both with NJDOT staff and with external agencies, such as MPOs and FHWA.
- One of the key successes NJDOT noted was the establishment of a Memorandum of Understanding (MOU). Establishing this MOU between the State DOT, MPO, FHWA, and FTA partners allowed for expectations to be clearly communicated about roles and responsibilities and technical execution of the e-STIP.
- Agencies should be realistic in acknowledging what is necessary versus what might be "nice to have." Having this perspective has allowed NJDOT to manage its e-STIP effectively and continue to evolve it over time.

Oregon Department of Transportation (ODOT): Software Adaptation and Integration (With System Constraints)

This session featured a representative from ODOT to discuss its agency's e-STIP, which, like WisDOT, has system constraints.

During the session, ODOT provided an overview of how its e-STIP and project workflow look, how the e-STIP was developed, and the pros and cons of the process as it currently stands. More information about ODOT's e-STIP is available [here](#); a matrix outlining the STIP amendment process is available [here](#).

Peer Presentation Notable Takeaways

- ODOT utilizes an internally built system for its e-STIP.
- Interactive, [GIS-based maps](#) are extremely valuable in helping the public understand what projects are happening in their region.
- Including the name and roles of individuals during the project workflow enables ODOT to provide quality control checks.
- Pros of the ODOT system, as shared by ODOT, include: transparency and availability of data to the public (e.g., the system feeds a PDF document that goes out nightly); meeting federal requirements; consistent processes for data entry; quality data for management decisions; and security.
- Cons of the ODOT system, as shared by ODOT, include: difficulty updating the system; and the potential for misunderstanding of data (i.e., if a staff member is not well versed in the type of data included, it can be difficult to pull the correct data).

Post-Presentation Discussions

A facilitated discussion led by WisDOT followed the peer presentation:

From a cost-benefit perspective, is it worth it to have nightly rather than weekly system updates? What led you to make this decision?

- From a resource perspective, it does not cost anything to have it done nightly rather than weekly because the system is automated.
- ODOT made this decision because ODOT wanted the basic information on approved amendments to be updated as soon as possible for involved stakeholders and partners.
- Also, ODOT used to manually update the STIP. This led to difficulty with getting updates in time before projects began. This is no longer something ODOT struggles with.

WisDOT must abide certain restrictions at the State level that are outside of the State DOT's control. How does ODOT navigate platform restrictions?

- ODOT does not have similar restrictions since the system was built internally by ODOT's IT department. However, ODOT does face administrative hurdles based on the cost of projects and other IT issues. One example is IT protocols for reporting. ODOT also has a limited number of staff to maintain the system. ODOT is currently considering possible updates to its e-STIP platform to address these issues.

What were some of the issues ODOT faced in its initial development of the current e-STIP?

- ODOT faced three main challenges: 1) initial lack of clear directions in developing the system; 2) inadequate quality control and security; and 3) overly ambitious goals.
- The lack of clear directions meant the system did not fully address the needs of staff.
- ODOT staff were previously able to go into the system and change project amounts without leaving any audit trail. This posed a serious quality control and security concern.
- ODOT initially tried to automate the management of surplus funds. While this could not be incorporated into the initial establishment of the e-STIP, ODOT is currently exploring future improvements to the e-STIP system.

Do FHWA approvals happen inside or outside of the e-STIP system?

- All FHWA approvals occur within the system. However, due to firewall issues, ODOT must coordinate with FTA separately as FTA staff members are unable to access the system.

What improvements does ODOT anticipate in the future?

- ODOT is currently working on ways to automate its financial plan checklist and better strengthen financial management activities within the e-STIP system.

New Mexico Department of Transportation (NMDOT): Vendors for Interface

This session featured a representative from NMDOT to discuss their agency's e-STIP, which was developed using a third-party vendor.

During the session, NMDOT provided an overview of its e-STIP history and procedures. NMDOT also described its process of procuring a third-party vendor to build its e-STIP. More information about NMDOT's e-STIP and STIP Procedures Manual are available [here](#) and [here](#) respectively.

Peer Presentation Notable Takeaways

- Having regular, quarterly meetings between NMDOT and the MPOs improves coordination in the management of the STIP process.
- NMDOT is able to push data directly from its e-STIP to FMIS. This required establishing a formal MOA with FHWA first.
- NMDOT started with a Microsoft Access database maintained in-house, which proved challenging to use. This prompted NMDOT to seek out vendors to build its e-STIP.
- Pros of using a vendor, as shared by NMDOT, included:
 - o Interactive and up-to-date public site
 - o Integrated approval system at all stages (MPO, DOT, FHWA/FTA)
 - All use the system; no need for emails
 - o Single system for all MPOs and NMDOT; easy to track fiscal constraint
 - o Integrated FMIS module (updated nightly) that shows real-time obligation data
 - Little to no manual data entry
 - o No server space necessary
 - o Integrated performance measures
- Cons of using a vendor, as shared by NMDOT, included:

- The system was originally designed for MPOs so the standard reports are geared more toward MPOs. It has been challenging to customize reporting for NMDOT to better reflect the State DOT perspective.
- There is a set number of maintenance hours for vendor support, which requires close monitoring by NMDOT staff.
- The vendor’s “Help Desk” does not have dedicated staff for NMDOT, so other items may be prioritized that then delay assistance to NMDOT.
- The initial contract was expensive, with costs increasing each year (34 percent increase as of last contract).
- NMDOT is currently considering its next steps for its current e-STIP, including the possibility of transitioning an in-house system.

Post-Presentation Discussion

A facilitated discussion led by WisDOT followed the peer presentation:

What happens to NMDOT’s data once the contract with the vendor is terminated?

- It is explicitly written in NMDOT’s contract that all of NMDOT’s data is preserved. Once the contract is terminated, the vendor will be legally required to provide all the data to NMDOT within 48 hours.

How long do projects remain on NMDOT’s public site?

- They remain there until a new STIP goes into effect.

Are MPOs publishing their TIPs outside of the e-STIP system? Or, are they using the system to do their TIP publishing as well?

- The smaller MPOs use the e-STIP system, especially since the reports generated by NMDOT’s process were originally designed for MPO use. The two larger MPOs in New Mexico run additional reports and are more comfortable managing their TIPs and fiscal constraint using their own systems.

Is the e-STIP accessible by handheld mobile devices?

- Yes. There is not an app, but as long as users can access a web browser on their phone, they can access NMDOT’s e-STIP. This includes both the public and internal sites depending on the level of access.

Conclusion and Key Takeaways

This peer exchange, led by FHWA and WisDOT, convened representatives from Federal and State agencies across the U.S. to discuss how to design and improve e-STIP processes. Participants shared their experiences, lessons learned, and key challenges during group discussions. Following the peer exchange, WisDOT used the information shared for an internal report-out to its leadership and for consideration of possible future updates for its existing e-STIP.

Key takeaways from discussions:

- A dynamic e-STIP improves the effectiveness and transparency of the TIP/STIP process.

- Systems that are inefficiently designed can make it challenging both for State DOT and Federal staff to manage the process and for the public to access the information they need.
- E-STIPs can be improved through increasingly automated processes that allow for up-to-date information and interactive sites featuring GIS maps and visual tools.
- While there is a variety of market-ready solutions, for some State DOTs, it may be more effective to develop the e-STIP internally.
 - Developing an e-STIP in-house ensures that all relevant staff in the STIP process can provide input regarding their needs for the program, resulting in an e-STIP tailored to the specific State DOT, rather than having the State DOT tailor their STIP process to accommodate a vendor solution.
 - Developing an e-STIP in-house may also be more cost-effective in the long term.
 - When developing an e-STIP internally, it is important to prioritize staff needs over staff wants, and avoiding any unnecessary add-ons, until there are more funding and resources available.
 - MOAs and MOUs help to define clear roles and responsibilities, whether that be with State, MPO, and Federal partners, or third-party vendors.

Appendices

Appendix A: Key Contacts

Peer Exchange Planning Team

Mike Barry, Transportation Specialist

FHWA Office of Planning
Washington, D.C.

Mitch Batuzich, Transportation Planner

FHWA Wisconsin Division
Madison, WI

Mary Forlenza, Team Lead, Planning and Program Development

FHWA Wisconsin Division
Madison, WI

Alexander Gramovot, Planning Section Chief, Bureau of Planning and Economic Development

Wisconsin Department of Transportation
Madison, WI

Chandra Inglis-Smith, Transportation Specialist

FHWA Office of Planning
Washington, D.C.

James Kuehn, Statewide MPO-RPC Coordinator, Bureau of Planning and Economic Development

Wisconsin Department of Transportation
Madison, WI

Ashley Mang, Policy Analyst

U.S. DOT Volpe Center
Cambridge, MA

Reena Mathews, Transportation Specialist

FHWA Office of Planning
Washington, D.C.

Justin Shell, Deputy Administrator

Wisconsin Department of Transportation
Madison, WI

Jill Stark, Community Planner

FHWA Office of Planning
Washington, D.C.

Spencer Stevens, Team Lead, Planning Capacity Building Team

FHWA Office of Planning
Washington, D.C.

Rachel Strauss McBrien, Community Planner

U.S. DOT Volpe Center
Cambridge, MA

Charles Wade, Director, Bureau of Planning and Economic Development

Wisconsin Department of Transportation
Madison, WI

Todd Van Fossen, Section Chief, Program Finance

Wisconsin Department of Transportation
Madison, WI

Tiffany Xie, Policy Analyst (Student Trainee)

U.S. DOT Volpe Center
Cambridge, MA

Cheng Yan, Transportation Specialist

FHWA Office of Planning
Washington, D.C.

Peers

**Jeff Flowers, Statewide Investments Section
Manager**
Oregon Department of Transportation
Salem, OR

**Eric Powers, Director, Division of Capital
Investment and Program Coordination**
New Jersey Department of Transportation
Ewing Township, NJ

Jolene Herrera, STIP Staff Manager
New Mexico Department of Transportation
Santa Fe, NM