

Peer Exchanges

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– Peer Exchange Report –

“Development of an Electronic Statewide Transportation Improvement Program (E-STIP) Administration, Amendment Process, and Financial Management Information System (FMIS) Interoperability in Connecticut”

Location:	Glastonbury, Connecticut
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Exchange Host Agencies:	Federal Highway Administration (FHWA), New York Division Office (FHWA-NY) New York State Department of Transportation (NYSDOT) New York Metropolitan Transportation Council (NYMTC)
Exchange Participants:	Federal Highway Administration (FHWA), Connecticut Division Office (FHWA-CT) Federal Transit Administration (FTA), Region 1 Connecticut Department of Transportation (ConnDOT) South Central Regional Council of Governments (SCRCOG)

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I. Executive Summary

The following executive summary briefly describes proceedings from a one-and-a-half day Peer Exchange on “Development of an Electronic Statewide Transportation Improvement Program (E-STIP) Administration, Amendment Process, and Financial Management Information System (FMIS) Interoperability in Connecticut,” supported by the Federal Highway Administration (FHWA) and Federal Transit Administration’s (FTA) Transportation Planning Capacity Building (TPCB) Program.

In cooperation with NYSDOT, staff from FHWA’s New York Division Office (FHWA-NY) created an electronic database and associated web-based application for the state of New York. The database and associated application have significantly enhanced the efficiency of STIP and Transportation Improvement Program (TIP) development, as well as the approval and amendment processes for NYSDOT, FHWA-NY, and New York’s metropolitan planning organizations (MPOs) located within NYSDOT’s Regions 8, 10, and 11.

Connecticut state MPOS, the Connecticut Department of Transportation (ConnDOT), and FHWA’s Connecticut division office (FHWA-CT) were interested in replicating the E-STIP in Connecticut. The purpose of the Peer Exchange was to provide a forum for NYSDOT, ConnDOT, FHWA-NY, and FHWA-CT personnel to:

- 1 – Exchange, discuss, and analyze the technical and business information necessary to transfer E-STIP technology to Connecticut.
- 2 – Explore the integration of the Federal financial management system, planning information, and geospatial data with the E-STIP.
- 3 – Discuss ConnDOT’s business needs and the issues required for successful E-STIP implementation.

The peer exchange, which was jointly hosted by FHWA-NY, NYSDOT, and the New York Metropolitan Transportation Council (NYMTC),¹ was presented as a simultaneous video conference and webinar using Adobe Acrobat software. Members of FHWA-CT, ConnDOT, and Connecticut’s South Central Regional Council of Governments (SCRCOG) also participated in the exchange. Via a live two-way video feed between FHWA-NY and FHWA-CT and a simultaneous webinar for participants, the exchange hosts discussed all aspects of the E-STIP electronic database, the technology required to develop the system, and the challenges and issues faced while developing the electronic process. The exchange hosts also responded to attendees’ questions.

The key questions and findings that emerged from the Peer Exchange were as follows:

What are the benefits of the E-STIP?

- E-STIP streamlines STIP development and amendment approvals, expedites project delivery time, and reduces errors.
- E-STIP improves fiscal management and constraint.
- Integrating the Transportation, Economics and Land-Use System (TELUS) and the federal financial management system (the FMIS) with the E-STIP can potentially lead to significant time-savings.

¹ NYMTC is the MPO for nearly two-thirds of New York; the MPO includes the regions of New York City, Long Island, and the lower Hudson Valley.

What were the critical success factors in developing and implementing the E-STIP in New York State?

- Establishing business rules and work flow upfront were essential to ensure that the system met agencies' business needs.
- Adopting open (versus proprietary) software made it easier for staff to share and update the E-STIP.
- Using a modular approach allowed different users to customize component parts to meet varying business needs.
- Creating an intuitive interface helped new users quickly adapt to the new system.
- Collaboration among FHWA-NY, FTA, NYSDOT, NYMTC, and NJIT was essential in developing buy-in to the system.
- The robust size and flexibility of the E-STIP were critical factors in meeting business needs.

What are some key lessons learned for transferring the E-STIP to other agencies?

- Proceed in small steps to gain users' trust.
- Document all steps of the development process.

The report that follows this executive summary provides more detail on these findings. The report also summarizes the presentations and discussions at the Peer Exchange to provide information about the background and history of the E-STIP, as well as the system's business processes, user base, and technical components.

II. Introduction

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In cooperation with NYSDOT, NYMTC, and interns from Sienna College, FHWA-NY created an E-STIP for the state of New York. The New Jersey Institute of Technology (NJIT) also contributed to E-STIP research.

The E-STIP is an electronic database and associated web-based application containing STIP project information, including project name, scope of work, funding phase, and routing processes. The E-STIP is accessible to New York State and FHWA-NY headquarters and field staff, as well as MPO representatives across the state.

Development of the E-STIP database was a collaborative effort among FHWA-NY, NYSDOT, Sienna College, and NYMTC, which receives 70 percent of the total fiscal amount for the New York State STIP. Staff from FHWA, FTA, and NYSDOT also collaboratively established common standards for the E-STIP database, such as processes for amendment approvals, access, security, and data change policies.

NYSDOT Headquarters includes four MPOs (out of the thirteen MPOs in New York State) in the E-STIP target region. These four MPOs use the E-STIP to manage their transportation improvement plans (TIPs). Personnel from these MPOs are connected to the NYSDOT Wide Area Network, which allows them access to E-STIP applications.

The nine New York State MPOs not included in the E-STIP target area maintain separate TIP databases and provide NYSDOT with project modifications. Using the E-STIP, NYSDOT then inputs these modifications into the STIP.

The E-STIP process generally begins with an MPO or Technical Coordinating Committee (TCC).² The MPO or TCC initiates a STIP amendment or project by entering information into the E-STIP system. Once completed, this information is automatically and electronically routed to NYSDOT, which takes further actions or approvals on the projects if necessary. Once approved by NYSDOT, the information is routed via the E-STIP to the appropriate federal agency. For example, transit projects are routed to FTA and highways-related transportation projects are routed to FHWA. FTA and FHWA planners then review, evaluate, and approve specific STIP projects directly within the database.

III. Key Findings

The following bullets summarize the key questions and findings that emerged from the day-and-a-half long session.

What are the benefits of the E-STIP?

- ***E-STIP streamlines STIP development and amendment approvals, expedites project delivery time, and reduces errors.*** FHWA-NY reported that prior to the E-STIP, project authorization documentation was hand-delivered from one office to another. Late data delivery and paperwork disorganization sometimes hindered the timely processing of STIP amendments. The E-STIP helped to address these issues. FHWA-NY stated that the E-STIP made processing and approving STIP amendments a much faster process with estimated time-savings of up to one month. The E-STIP also reduces input errors by introducing a standardized system of checks and balances.
- ***E-STIP improves fiscal management and constraint.*** The E-STIP was not designed as an accounting tool. Nevertheless, the database has facilitated better fiscal management by allowing NYSDOT and Federal agency program managers the ability to simultaneously review and evaluate project obligation reports and more accurately assess fiscal allocations.
- ***Integrating planning and geospatial information into the E-STIP can lead to significant time-savings.*** FHWA-NY is working with NJIT to integrate TELUS with the E-STIP. TELUS is a planning tool that can help select a preferred project alternative. E-STIP is a tool that can be used once the preferred alternative is selected and turned into a project. Integrating TELUS with the E-STIP would allow TELUS data (such as project description) to be migrated into STIP data, thereby eliminating the need to input data into a second system. Integrating TELUS with the E-STIP could also broaden the geospatial information available in the E-STIP. A geospatial application (such as ArcView) could be used in the future to populate the E-STIP with specific geographic data.
- ***Integrating a financial management system with the E-STIP can ease transportation project authorization, modification and completion.*** Integrating the E-STIP with the FMIS could provide more timely and accurate updating of obligation data for highway projects. However, transit projects would not be affected by this integration because FTA's financial system differs from FHWA's financial system.

What were the critical success factors in the development and implementation of the E-STIP?

- ***Establishing business rules and work flow upfront ensured that the system met business needs.*** Workflow refers to the various steps, rules, and procedures that guide

² TCCs are advisory bodies associated with NYMTC that help advise the MPO on technical matters related to projects, plans and programs.

a project from creation to completion. To appropriately translate workflows into an electronic format within the E-STIP database, staff carefully considered agencies' business rules and established agreement on what these rules were. As a result, the E-STIP workflows correctly matched agencies' business rules, facilitating project approval and completion.

- ***Adopting open (versus proprietary) software made it easier to share and update the system.*** Software may be either proprietary (i.e., includes restrictions on use) or open (i.e., no restrictions on use). Staff considered both proprietary and open-source software for the E-STIP. An earlier version of the E-STIP used proprietary software, but the current version uses open software, which is free. The switch to open software made it easier to share and update the E-STIP without having to acquire a software license, which the proprietary software would have necessitated.
- ***Using a modular approach allowed different users to customize component parts to meet their varying business needs.*** Modularization means that component parts of the database can function as standalone systems. The E-STIP, a modular system, allows users to customize component parts to suit differing business needs. At the same time, these component parts are standardized to a certain extent so that clients interested in the E-STIP can easily adopt the system. The E-STIP modules are described in more detail in Section IV ("Summary of Discussions") of this report.
- ***Creating an intuitive interface helped new users quickly adapt to and use the new system.*** The E-STIP was designed to be as user-friendly as possible. Online guides and intuitive interfaces help new users easily learn how to use the E-STIP and ensure that operations are consistent, streamlined, and efficient..
- ***Collaboration among FHWA-NY, FTA, NYSDOT, NYMTC, and NJIT was essential in developing buy-in to the system.*** Extensive collaboration between agencies made it possible to develop a system that met many users' business needs. As a result of this collaboration, agencies developed trust and familiarity with each other's workflow processes and the E-STIP.
- ***The robust size and flexibility of the E-STIP were critical factors in meeting business needs.*** The E-STIP program is capable of receiving a large amount of information and has the flexibility to produce data tailored to individual users' needs. For example, some New York MPOs contribute to the same transportation project, while other projects are contained within only one MPO. To account for multiple business processes and over 2,000 transportation projects (the number of projects currently in the database) the E-STIP accommodates batch entries and flexibility in project reporting and displays. The database also allows users to access a built-in calculator to automatically determine federal-aid matching rates.

What are some key lessons learned for transferring the E-STIP to other agencies?

- ***Proceed in small steps to gain users' trust.*** Taking incremental steps when building the E-STIP will help ensure that new applications or systems do not overwhelm or confuse users. New users who already have apprehension about using new systems will be less inclined to utilize them if systems are not initially accurate. Taking a clearly defined, incremental approach to developing the E-STIP will help establish a precedent of high-quality work. This precedent will contribute to agency-wide trust in the system.
- ***Document all steps of the development process.*** It is important to document all decisions related to E-STIP development. This documentation facilitates continuity of the E-STIP despite staff turnover or other changes.

IV. Summary of Discussions

1: E-STIP Background

Robert Griffith, Chief of Planning and Program Development, FHWA-NY

Paul Hesse, Program Information and Coordination Specialist, FHWA-NY

The E-STIP has evolved significantly over time. The first system considered to be the 'E-STIP' went online in 1998 and was an Adobe PDF form that NYSDOT and FHWA-NY emailed from one office to another. Once completed, the form generated an e-mail to the NYSDOT and FHWA-NY offices. The e-mail arrived at a centralized email inbox, so that NYSDOT and FHWA-NY staff could simultaneously review all e-mails. While this system facilitated communication between the offices, there were some challenges: for instance, the loading speed for the PDF document was slow. In addition, staff turnover made it necessary to clearly communicate how to access the PDF document. If this communication did not occur, delays in processing STIP amendments or projects could occur.

FHWA-NY and NYSDOT later engaged in a process review and determined that there could be a more streamlined way of processing STIP amendments and projects than using the PDF form. To speed this processing, the agencies proposed to translate the process to an electronic database. FHWA-NY worked with NYSDOT to create an electronic user interface and database that was accessible to NYSDOT and FHWA-NY. This interface—the first generation of the E-STIP—went operational in 2002 and was only used for STIP management. In 2006, four MPOs were fully integrated into the E-STIP system, which allowed simultaneous TIP (at the MPO level) and STIP (at the state level) management. The current E-STIP is considered to be the second generation system. The hallmark of the E-STIP is a built-in process through which project amendments are automatically passed from one approval level to the next, according to agencies' workflow rules.

Currently, FHWA-NY employees are the administrators of the E-STIP. However, talks are underway between FHWA-NY and NYSDOT to relocate the system to NYSDOT, at which point NYSDOT employees or their contractors would become the E-STIP administrators.

The New York State STIP's overall program cost is approximately \$1.6 billion in roadway projects that use FHWA funds and \$200 million in transit projects that use FTA funds. About 1,000 projects are authorized annually in the E-STIP. The types of projects entered into the E-STIP span a wide spectrum of work. For instance, projects might include resurfacing work with total costs in the low thousands to bridge construction work with total costs of several hundred millions dollars.

There are 32 authorized individual users of the E-STIP system but no limit to the number of users that can access the system at any given time. Users include FTA, MPO, NYSDOT, and FHWA-NY staff. Once logged in to the system, users can browse data and add or edit authorized data. Users at the entry level and their supervisors can edit data. However, all users can disapprove a change to send it back to entry-level users for corrections. Access to E-STIP can also occur through an open browse mechanism, which does not require log-in information. Users entering the system through the open browse mechanism are not tracked; in other words, information related to users' attempts to access the system through the open browse mechanism is not stored.

There were several key challenges involved in developing the E-STIP. First, it was important to establish how projects were sent forward through the chain of command. A related challenge was documenting the business process and establishing a clear workflow layout to develop an appropriate data model. Finally, appropriate software had to be identified that could be used 'off the shelf' and without a need for licensing agreements.

2. Business Process

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E-STIP users are grouped into one of eight 'levels.' Users propose modifications to the E-STIP and input these modifications into the system, which triggers an approval workflow. Once the workflow has been completed, the modifications are accepted. If modifications are disapproved, then they are returned to the originating level for correction and resubmission. If disapproved, the modification will be electronically sent back to the data originator (the MPO or NYSDOT) for further review, comments, and edits. However, in most disapproval situations, the reviewer calls the data originator prior to disapproving the project within the E-STIP and sending it back to Level 0 for further modification. Because many project disapprovals are merely the result of typos or input errors, such errors can be quickly resolved through a phone call.

Once a disapproved project has addressed the necessary changes, it is again sent through the electronic approval process. An inter-office communication feature on the E-STIP allows messages to be sent to and from MPOs to NYSDOT, internally within NYSDOT, or from NYSDOT to either FHWA or FTA. This feature also allows users to notify one another about when a project has been passed on to the next approval level. This inter-office communication system was put in place because security requirements of the E-STIP prevent users from having the direct ability to interface with FHWA's email system.

The table below shows each user level, user groups, and each level's capabilities.

LEVEL	USERS	CAPABILITIES
0	MPO or TCC staff	Create and modify data Browse E-STIP projects Add and edit MPO draft data Edit and create E-STIP amendments
1	MPO or TCC staff Supervisors TCC directors and backups	Edit, create, and approve E-STIP amendments Add and edit MPOs' draft data
2	NYMTC central staff	Browsing and tracking Approve NYMTC E-STIP amendments Report generation
3	NYSDOT program coordinators	Create and modify data for rest of state not entered into the system by Level 0 and 1 users Approve modifications submitted by lower levels Browse, track, and report on database
4	NYSDOT authorization staff	Similar capabilities as Level 3 users Submit modification from lower levels Make final determination for phase modifications required to be on the TIP and STIP
5	FTA or FHWA staff (currently there are no FTA level 5 users)	Recommend actions to Level 6 users
6	FHWA and FTA staff (Federal program supervisors)	Take approval or disapproval actions Run reports Browse and track modifications
7	NYSDOT capital update staff	Add and edit non-MPO draft data
8	FHWA fiscal staff	Update obligation data for highway projects

More detailed descriptions of user levels and capabilities appear below.

MPO (or TCC) users are either Level 0 or 1. Level 0 users can create and modify their data and browse E-STIP projects, but have no approval capabilities. In addition, Level 0 users can add and edit MPO draft data. Draft data is project to be included in the next STIP period

Level 1 users, who include supervisors, TCC directors and their backups, can edit and create E-STIP amendments (as can Level 0 users) and initiate the approval process. Modifications are bundled into ballot packages, which are printed and sent to voting members on the policy board at the MPO. Once a signed ballot is faxed back to the TCC Director (Level 1), the appropriate supervisor can approve the ballot, triggering the approval workflow. In addition to editing and creating E-STIP amendments, Level 1 users can add and edit MPOs' draft data for projects to be included in the next STIP period

Level 2 users include NYMTC Central Staff. These users approve only those amendments submitted by the three TCCs that make up the NYMTC MPO. These users cannot add or edit projects or phases to the E-STIP database. Because their editing capabilities do not exist, Level 2 users, when logged into E-STIP, see a smaller menu than do Level 1 and 0 users. Level 2 capabilities include browsing, tracking, and report generation.

NYSDOT users are grouped into Level 3, 4 and 7.

Level 3 users can create and modify data for the rest of the state that Level 0 and 1 users did not enter into the system. Level 3 users can also approve modifications submitted by lower levels. They can browse, track and report on the entire database.

Level 4 users have similar capabilities to Level 3 users and can also submit modifications from lower levels. Level 4 users make the final determination for modifications that are required to be on the TIP and STIP but are not required to have federal approval. They can also browse, track and report on the entire database.

Level 7 users can add and edit non-MPO draft data. Draft data are projects that will be included in the next STIP period. These users can also browse, track and report on the entire database.

Federal users are grouped into Levels 5, 6 and 8.

Level 5 users can be either FTA or FHWA staff, but at this time FTA chooses not to have Level 5 users as STIP approval actions are delegated to other FTA staff. Level 5 users make recommendations to Level 6. If a Level 5 user makes a recommendation to disapprove a modification, this disapproval does not return to the data originator for correction but proceeds to Level 6. If in agreement, the Level 6 user will then make the disapproval and send the data back to the originator for correction.

Level 6 users include FHWA and FTA staff. At this level, users can take approval or disapproval actions, run reports, browse and track modifications. Utilities capabilities include changing passwords and editing federal fund and project phase codes. A phase refers to each step of project implementation, such as design, right-of-way acquisition, construction, and inspection. After Level 6 approval, the project is removed from the list.

Level 8 users include only FHWA staff. These users can update the obligation data for highway projects. Under the current E-STIP obligation routine, projects are automatically compared to past projects on prior STIPs. If projects overlap with prior STIPs, the system will display the project as 'already obligated.' Moreover, historical data are used in the E-STIP to assess whether project have been previously obligated.

An additional E-STIP function has been developed that matches ESTIP data to FMIS figures, so that FHWA can quickly verify that requests for project funding are in the approved STIP. The FHWA Financial Clerk receives an authorization request in FMIS, opens the ESTIP-FMIS function, and enters the STIP reference number (PIN) identified in the FMIS authorization request. The function then searches the ESTIP database for a match. If there is a match, the funds are authorized in FMIS. If there is no match, NYSDOT is notified and the authorization request is either put on hold or withdrawn by NYSDOT.

Question: *How is FTA incorporated into the E-STIP?*

Answer: FTA's Region 2 was connected to the 2006-2008 E-STIP; prior to this version of the E-STIP, FTA Region 2 had a separate module that was developed by NJIT. FTA's Region 2 utilizes only one level of approval, but if they wanted to allow approval capabilities to other FTA regions, the E-STIP could accommodate this need.

Question: *How do you incorporate rollover clauses into the database?*

Answer: The project rollover clause says that if data was in the prior STIP, then projects are available for obligation. However, there is an ongoing concern that old projects may move into the STIP, in which case it is difficult to demonstrate fiscal constraint. In previous project rollovers, there was no demonstration of fiscal constraint, but now E-STIP administrators cap the rollovers and ensure that there are financial offsets. The business rules between FHWA, NYSDOT, and participating MPOs are set up to ensure that all projects adhere to fiscal constraint. For example, before obligations are completed for a particular project, the E-STIP will automatically search the current and prior STIPs for that project. If the project was in the prior STIP, NYSDOT can ask whether it is fiscally viable to bring the work into the current STIP.

Question: *How does the E-STIP handle projects requiring multiple MPOs' approval?*

Answer: The E-STIP does not currently have an ability to handle multiple MPOs' approvals for the same project, since NYSDOT does not require multiple MPO approvals on any project. In the current E-STIP, any project requiring multiple approvals would have to be handled at the state level. For example, one lead MPO would process this project, and then New York State DOT [E-STIP administrators] would provide the certifications [to FHWA or FTA] that the project had the additional MPO approvals. However, the E-STIP is flexible enough to accommodate different business rules should another agency require it. It would be possible to build another feature into the system so that projects requiring multiple approvals could be routed from Level 1 to the appropriate group of MPOs.

Question: *How does the E-STIP deal with fiscal constraint?*

Answer: NYSDOT controls the program funding amounts. Users submitting new projects add in comments indicating that project funds are an offset for another project coming in at the same time. Fiscal constraint is also managed at the state level: a spreadsheet matches the initial STIP to changes that occur in order to provide figures related to federal aid funds. FHWA and FTA verify the STIP's fiscal constraint by comparing NYSDOT's total programmed amounts against the annual authorized amounts, controlled by the most current Federal legislation. In the event of the expiration of authorizing legislation, FHWA measures fiscal constraint against any continuing resolutions and reasonable projects for future funding amounts.

3. Demonstration

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The E-STIP includes several onscreen sections, or modules, that offer users easy access to a variety of resources. The live E-STIP saves data as users proceed from screen to screen, or

module to module; system crashes may cause users to lose some amount of data up until the last completed screen or module.

In addition to the modules, a reporting feature on the E-STIP uses the Crystal Reports application to allow users to build a query online, e.g., 'display every highway project from the mid-Hudson South MPO,' and export the report to a PDF file or Excel spreadsheet. The reporting feature also allows users to generate standard reports. These standard default reports include the fiscal constraint report (that determines which projects have been fiscally obligated), the major funds report (that displays the obligated and un-obligated monies from five major funding sources), and the approved phases report (that displays all projects on the approved and active STIP). To meet engineers' requests, E-STIP administrators also created a major projects report that displays all projects costing over \$25 million.

Another important E-STIP feature is the 'shelving' option, which allows users to temporarily save information for a future STIP without actually entering the project into the STIP. Shelving is an administrative tool designed to help users save important project-related data for possible future inclusion in the next update of the STIP.

Figure 1 below shows a screen shot of all of the modules displayed on the E-STIP.



Figure 1. Screen shot of E-STIP modules

Brief descriptions of some of the E-STIP modules follow below:

Browse Current STIP module (all levels): Current STIP projects are displayed in the 'Browse Current STIP' screen with project-level information, including region, county, description, and phase/date of fiscal obligation. A screen shows the dollar amount of funds, whether it was an NFA (non-federal amount) match, whether the project was on the approved STIP and TIP, and where it is in the approval process. Figure 2 below shows a screen shot of the E-STIP 'Browse' module.

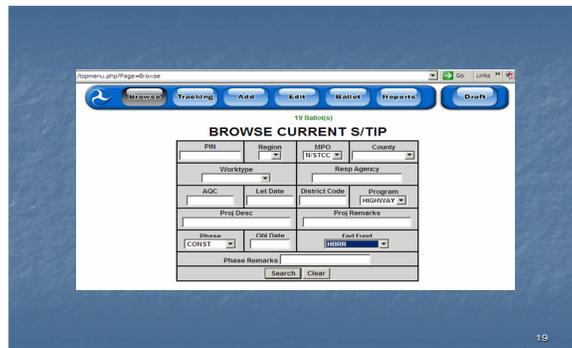


Figure 2. Screen shot of E-STIP 'Browse' module

Figure 3 below shows a screen shot of data within the 'Browse' module.

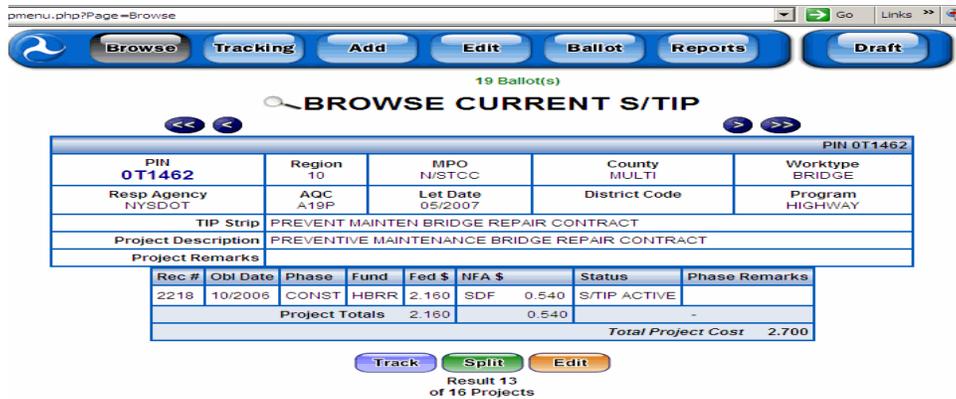


Figure 3. Screen shot of data in the E-STIP 'Browse' module

Tracking module (all levels): In the 'Tracking' module, users can view the financial status (e.g., whether or not a project has been fiscally obligated) of all projects that have been electronically submitted to the E-STIP. One feature in this module allows users to 'click' on a project to see who approved the ballot and when approval was taken. Figure 4 below shows a screen shot of the 'Tracking' module in E-STIP.



Figure 4. Screen show of the 'Tracking' module in E-STIP.

Add Module (Levels 0 and 1 for MPOs and Levels 3 and 4 for all others): The 'Add' modules allow users to add new project or copy existing projects (with or without phases). Once added, the modifications must follow the approval workflow. Figure 5 below shows a screen shot of the 'Add' module in the E-STIP.

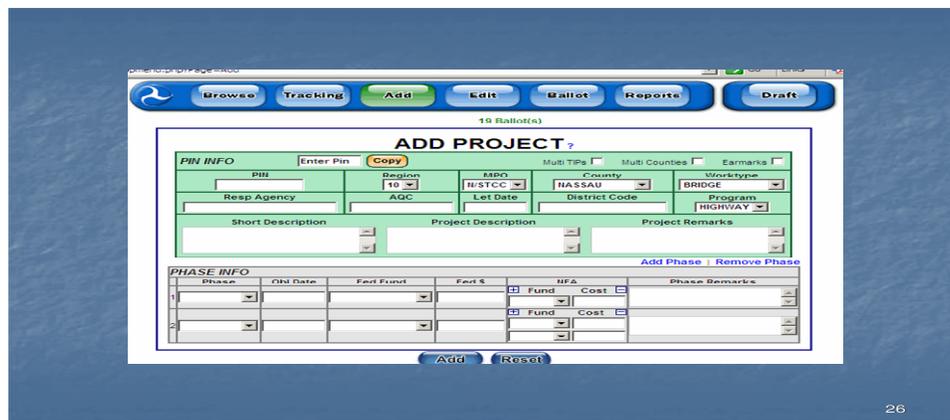


Figure 5. Screen show of E-STIP 'Add' module.

Edit module (Levels 0 and 1 for MPOs or Levels 3 and 4 for all others): The 'Edit' module shows users a list of projects that have been approved and allows users to edit projects. For example, users can easily modify fund matches to a project and immediately save those changes. Changes to a record are designated with different colors (e.g., yellow indicates that the record has a pending edit, while grey indicates that the project has not been modified) so that others can easily identify which projects have been edited. Modified projects follow the standard workflow outlined in the above section of this report; however, once projects are approved, project edits are no longer allowed in the E-STIP system. Figure 6 shows a screen shot of E-STIP 'Edit' module

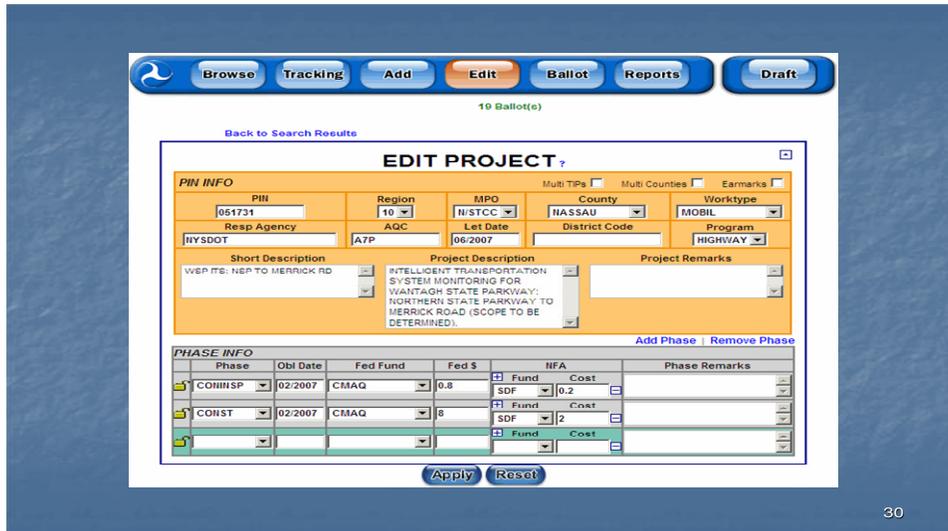


Figure 6. Screen shot of E-STIP 'Edit' module

Ballot module (Levels 0 and 1 for MPOs and Levels 3 and 4 for all others): The 'Ballot' module allows users to see all proposed changes to projects on one screen. This module also provides a comment function. Rather than send projects one-by-one through the approval process, a time-consuming procedure, users can access the ballot module, group all proposed projects into an electronic 'routing package,' and send the package through the approval process. All highways projects go in one routing package to FHWA, while transit projects are sent in another routing package to FTA. All user levels have the ability to access the ballot module, but only Levels 0 and 1 can edit projects in this module. Users with approval status can also approve only one entry in the ballot in addition to all entries at one time. Figure 7 below shows a screen shot of the E-STIP 'Ballot' module.

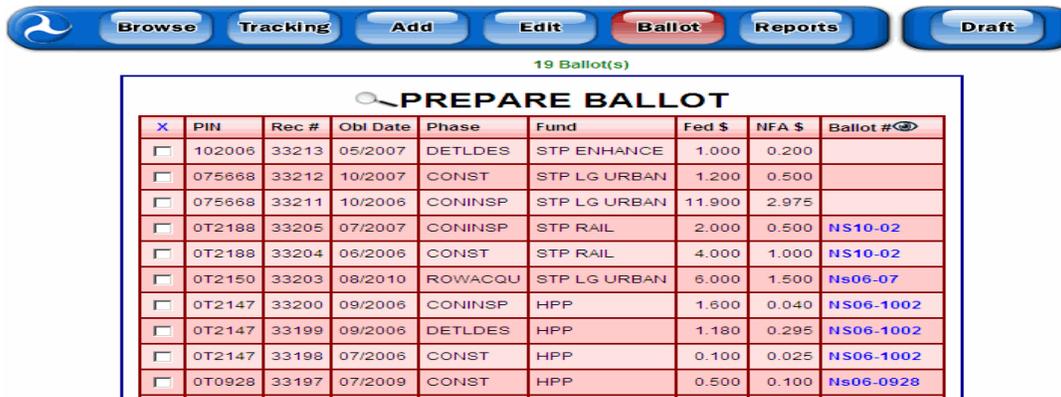


Figure 7. Screen shot of E-STIP 'Ballot' module

Shelved Module (Levels 0 and 1 for MPOs and Levels 3 and 4 for all others): This module allows users to bring projects “off the shelf” and start them through the approval workflow.

Reports module (All Levels): Several pre-programmed reports are available. In addition, there is a report builder that allows users to specify the fields that they would like to query. The results are then exported to one of the pre-programmed reports or to Excel. Figure 8 below shows a screen shot of the ‘Report’ module in E-STIP.

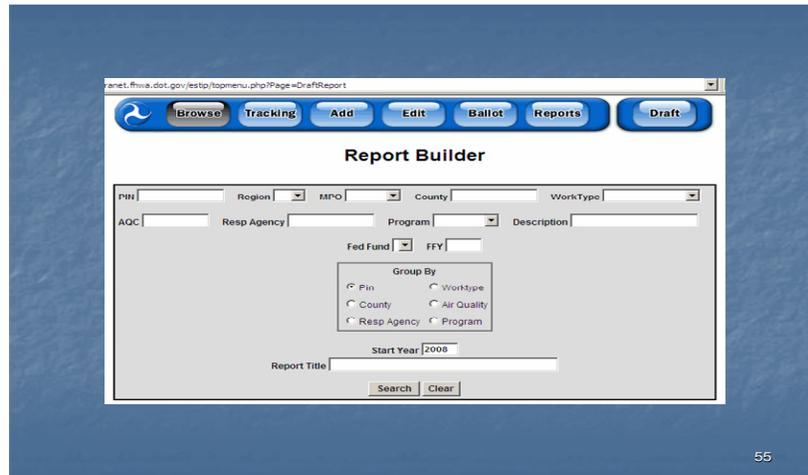


Figure 8. Screen shot of E-STIP ‘Report’ module.

4: E-STIP IT Configurations

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Paul Hesse, Program Information and Coordination Specialist, FHWA-NY*

E-STIP uses free PHP software (Version 5.11) and runs on an IIS Microsoft SQL server using Windows 2000, but FHWA-NY anticipates a server upgrade to Windows 2003 in the future. The E-STIP’s SQL server is part of FHWA-NY’s active directory; however, the web server is hosted outside of the local firewall.

Question: *Did FHWA-NY or NYSDOT develop a user guidance manual to educate new staff on the E-STIP process?*

Answer: Currently, the E-STIP offers some on-screen ‘help’ guidance documents to educate users, but FHWA-NY is continuing to develop the help features of the E-STIP. These documents were built to respond to user needs and have developed slowly and over time. Now that the basic structure for the E-STIP is fully intact, E-STIP administrators plan to work on making the database’s help features more robust.

Question: *Does the E-STIP use a Crystal Reports server edition and how many concurrent user licenses are necessary?*

Answer: The E-STIP currently uses Crystal Report Enterprise. However, when the E-STIP migrates to a new web server, it will switch over using Microsoft Visual Studio, a reporting tool, which allows use of Crystal Reports as an application. If the E-STIP was migrated to other agencies, a reporting tool would be necessary, but use of Crystal Reports is not mandatory. The E-STIP also offers five connecting user licenses, which is adequate for the 32 users of the system.

Question: *When an approval is made at any level along the workflow chain, are automatic emails generated to make the other levels aware of the approval?*

Answer: The E-STIP has a security requirement regarding interfacing with FHWA's email system and automatic emails cannot be generated for FHWA [level 6 users]. However, FHWA-NY has used standalone applications that can generate these automatic emails.

Question: *Is there a log file that records changes to the E-STIP database?*

Answer: E-STIP administrators, who are FHWA-NY employees, do record use of the utilities feature (e.g., to change options on a drop-down menu) and also record login attempts and when users change their passwords. Database administrations do not record actual transactions of phase changes and changes at the project level to a log file, although they do keep historical records of phase changes (with a time stamp of when the change was made). Changes to project-level data (such as modification of a project description) are not recorded. The E-STIP administrators have set up the business rules in such a way that recording changes is not a requirement.

Question: *What source editor did E-STIP programmers use and do you need a plug-in to the source editor?*

Answer: Programmers used a standard text editor, such as DreamWeaver, NotePad++, or Word Pad. There were no mandated source editors. As long as the code was ultimately in the correct format, the choice of source editor was left up to individual programmers' preferences. No plug-in for the source editor was needed. The only development tool we use is FHWA's standard Internet Explorer for the browser.

Question: *Does NYSDOT archive old projects in the E-STIP and, if not, is it possible to do so within the E-STIP system?*

Answer: It depends on what is considered to be 'archiving'. One method of archiving is via an enterprise update: users will develop new datasets (e.g., for the next STIP) offline. The old data are saved to an old database and the new data are loaded the new dataset. The old data are still used to see rollover projects before obligations are processed. For any data modifications, project level changes are not stored; neither are increases or decreases to the non-federal shares. All other changes to the phase data are kept in the database. The complete project history is available through a report.

Question: *What level of hardware power do you recommend for the application and database server?*

Answer: The E-STIP web server has a 2 gigahertz processor and 4 gigabytes of RAM. The database server has a 3 gigahertz processor and 2 megabytes of RAM. The E-STIP database is only 35 megabytes in size.

Question: *Who controls user security?*

Answer: Security is internal to the system. FHWA IT security conducted a review of the system. Based on this review, security enhancements were added such as stronger passwords and log files. Once the E-STIP database is turned over to NYSDOT, however, NYSDOT will be responsible for administering security and FHWA will just be a user.

Question: *Did you review the Electronic Data Interchange (EDI) [a set of standards for how information should be exchanged with FMIS] that is available from FMIS? If so, why did you choose not to use it for the obligation update?*

Answer: E-STIP administrators did not review the EDI available from FMIS, as it does not deal with FTA obligations; however, administrators might be able to use the EDI to update some of the highway projects, but it would not cover all of the obligations needed to tie into the FTA system. E-STIP staff may consider this possibility in the future, but first wanted to get the user interface established.

Question: *Do you have a database schema schematic?*

Answer: In the SQL server there is a relationship diagram, which shows all the elements of a database, such as tables and fields, as well as the relationship between these elements.

V. Key Contacts

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VI. Attachments

A: Participant List:

Hosts

First	Last	Title	Organization
Robert	Griffith	Chief, Planning & Program Development	FHWA-NY
Paul	Hesse	Program Information & Coordination Specialist	FHWA-NY
Bill	Hebert	Transportation Planner	NYS DOT
Chris	Hardej	TIP Coordinator	NYMTC

Guests

First	Last	Organization
Eloise	Powell	FHWA-CT
Bill	Gordon	FTA-Region 1
James	Rose	SCR COG
Wanda	Jones	ConnDOT
Kate	Trudeau	ConnDOT
Kim	Michaud	FHWA-CT
Barbara	Breslin	FHWA-CT

Andy	Asaro	ConnDOT
Maribeth	Wojenski	ConnDOT
Sandy	Infantino	ConnDOT
Darren	Meyers	SCRCOG
Kathie	Daly	ConnDOT
Iona	Wilper	FHWA-CT
Debra	Ramirez	FHWA-CT
Karen	Damiani	FHWA-CT
Brad	Keazer	FHWA-CT
Rose	Etuka	ConnDOT
Alisa	Zlotoff	U.S. DOT Volpe Center

B: Agenda

Program for Tuesday, May 20, 2008

Begin	End	DESCRIPTION
9:00 am	10:30 am	NYSDOT E-STIP demonstration
10:30 am	10:45 am	Morning Break
10:45 am	12:00 pm	NYSDOT E-STIP demonstration and Question & Answer session
12:00 pm	1:00 pm	Lunch
1:00 pm	2:20 pm	NYSDOT E-STIP demonstration
2:20 pm	2:30 pm	Afternoon Break
2:30 pm	3:00 PM	Business logic/policy discussion and Question & Answer session

Program for Wednesday, May 21, 2008

Begin	End	DESCRIPTION
9:00 am	10:00 am	Business logic/policy and TELUS/E-STIP integration discussion
10:00 am	10:45 am	IT Specifications, Question & Answer session
10:45 am	11:15 am	Discussion of next steps; wrap-up

C: Participant MPO Websites

South Central Regional Council of Governments (SCRCOG)

www.scrkog.org

New York Metropolitan Transportation Council (NYMTC)

www.nymtc.org