SHRP2 SOLUTIONS
TOOLS FOR THE ROAD AHEAD

Guide to Integrating Business Processes to Improve Travel-Time Reliability (L01)

Guide to Integrating Business Processes to Improve Travel-Time Reliability

Challenge

Nonrecurring congestion, caused by weather, crashes, work zones, and special events, creates more than half of all motorist delay. Transportation agencies are looking for better ways to manage traffic operations and leverage existing capacity to make the highway system more reliable and reduce the cost of congestion for drivers, freight operators, and other users.

As a result, more and more agencies are exploring transportation systems management and operations (TSM&O), a cross-cutting discipline that engages multiple divisions within a State or local department of transportation (DOT), as well as other transportation, enforcement, and emergency services agencies within a region, to support effective use of existing transportation facilities.

SHRP2 research found that these operational activities are closely connected to core business processes, such as planning, programming, project development, and training, but making the right changes to these areas can be difficult without the right guidance.

Solution

One of the most effective ways to implement a change is to learn from those who have already done it. The second Strategic Highway Research Program (SHRP2) has developed a **guide** and a **report** that compiles best practices to help transportation agencies change their business practices to strengthen systems operations, address nonrecurring traffic congestion, and improve travel-time reliability. The materials enable agencies to identify staff skill sets; provide staff training; and establish operation guidelines, standard procedures, and protocols, incorporating them into agency polices, vision, mission, goals, and objectives.

The guide includes a step-by-step methodology that managers can follow to identify and integrate operational and programmatic processes to improve the operation and reliability of the highway network for its users. Examples of steps within the methodology include defining specific reliability goals and objectives, developing outcome-based performance measures that are designed to provide decision makers with information regarding reliability of the highways, documenting current business processes, and implementing policy changes that have a direct impact on improved operations. The guide also provides recommendations for documenting and institutionalizing these process changes after implementation.

A key component of the guide is instructions for applying Business Process Modeling Notation (BPMN) to an agency's business processes. BPMN is an approach developed by the IBM Corporation, to map and analyze transportation business processes in simple terms using straightforward graphical illustration.

The accompanying research report is based on a series of case studies that document business practices that successfully support TSM&O tactics.

An **E-Tool for Integrating Business Processes for Systems Operations** (project L34) that will present the guide's recommendations in a web-based format is being developed. The e-tool will enable a user to input a variety of scenarios, describe the desired outcomes, and receive recommended solutions to re-engineer day-to-day business practices. Using the software, agencies will be able to "map" their current practices and compare them to optimal practices that could maximize the agency's operations success.

Save Lives

These solutions reduce secondary crashes through faster response times, protect responders by implementing standard procedures, and improve work zone management and operations, which together result in less congestion and safer roads.

Save Money

Better operations can reduce the number and duration of road closures. Early identification of potential problems and better planning for special events decreases costs and congestion for motorists as well as the freight industry.

Save Time

These products provide highway agencies and state DOTs with the tools to reduce traffic congestion and traveler delay. Preventive measures mitigate problems before serious delays and congestion occur.

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RELIABILITY

Products from the Reliability SHRP2 focus area help transportation organizations improve travel reliability by reducing congestion through incident reduction, management, response, and mitigation.

Visit: www.fhwa.dot.gov/GoSHRP2
Learn more about products, case studies, and implementation assistance.

A series of workshops will be available in early 2015 to further support business process changes and recommendations from the guide. The workshops will help States understand the importance of these changes and will incorporate the e-tool to facilitate business process improvement. The workshops will also apply a capability maturity modeling (CMM) framework process to specific areas: traffic management, traffic incident management, work zones, special events, road weather, and arterial signal systems. Additional information about the workshops and specific CMM frameworks is coming soon. To learn more, contact a product lead listed in the Contact section of this page (at left).

Three versions of the e-tool are available for download in a **zip format**. Once downloaded, the file can be unzipped and placed anywhere on a system that is Java capable, or it can be copied onto a flash drive or other media that can be used on a system that is Java capable.

Three files for the e-tool installation are available for download:

- **SHRP2-etool-1.0-Final-Win7**: This version can be used by anyone using the Windows 7 or Windows 8 operating system. It is an executable file that will install both the e-tool and the required version of Java. Once installed, a shortcut is created to run the e-tool.
- **SHRP2-etool-1.0-Final-XP-Vista**: This version can be used by anyone using the Windows XP or Windows Vista operating system. It is an executable file that will install both the e-tool and the required version of Java. Once installed, a shortcut is created to run the e-tool. It may be necessary to also install the video codecs needed for watching the videos on an XP or Vista system. See the next file, DivxInstaller, for details.
- **DivXInstaller**: This file may be required if the e-tool is installed on a Windows XP or Windows Vista operating system. It will install additional video codecs that are not provided on a base XP or Vista install. It installs the new video codecs free of charge, but please be aware of the optional installation step. During the video codecs installation, one step includes installing additional optional software. When you reach the optional software page of the installation, uncheck the three options that are selected if you do not wish to download the additional software. This software is not necessary for the proper functioning of the tool and will adjust your browser.

Benefits

A State DOT or other transportation agency can use these tools to evaluate the effectiveness of its business processes in supporting highway operations and identify ways to change the organization into one that is better equipped to deliver effective transportation systems management and operations.

The Implementation Assistance Program

Implementation assistance is available to help State departments of transportation (DOTs), metropolitan planning organizations (MPOs), and other interested organizations deploy SHRP2 Solutions. A range of opportunities is available to raise awareness of SHRP2 Solutions and to encourage early adoption of these products. Application periods are offered approximately twice per year. Each product selected for implementation assistance has the potential to deliver more efficient, cost-effective programs to meet the complex challenges facing transportation today.

How can you learn more?

Visit: www.fhwa.dot.gov/GoSHRP2

- Additional product information
- Information about how this product is being used in the field
- Contact information for peers who are familiar with this product
- Links to research reports

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SHRP2 SOLUTIONS

About SHRP2 Implementation

The second Strategic Highway Research Program (SHRP2) is a partnership of the Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO), and the Transportation Research Board (TRB). TRB completed the research, and now FHWA and AASHTO are jointly implementing the resulting SHRP2 Solutions that will help the transportation community enhance productivity, boost efficiency, increase safety, and improve the reliability of the Nation's highway system.