Strategic Highway Research Program (SHRP2)
## Improving Business Processes for Better Travel Time Reliability

Input Template for Application of E-Tool

Introduction: This document is a template for to document inputs as found in the eTool for Business Processes to Improve Travel Time Reliability[1], a downloadable tool designed to help agencies improve business processes for better travel time reliability. This document is intended to compliment the e-tool and provide a mechanism for agencies to save and share inputs, in an editable document format, with collaborators/stakeholders working together on a common process.

Project Name: [   ]

Travel time reliability is a measure of the consistency of a trip duration based on a specific time of day and route. Integrating a business process to improve travel time reliability is a seven-step process that is detailed in this input template. The following process diagram shows each step.
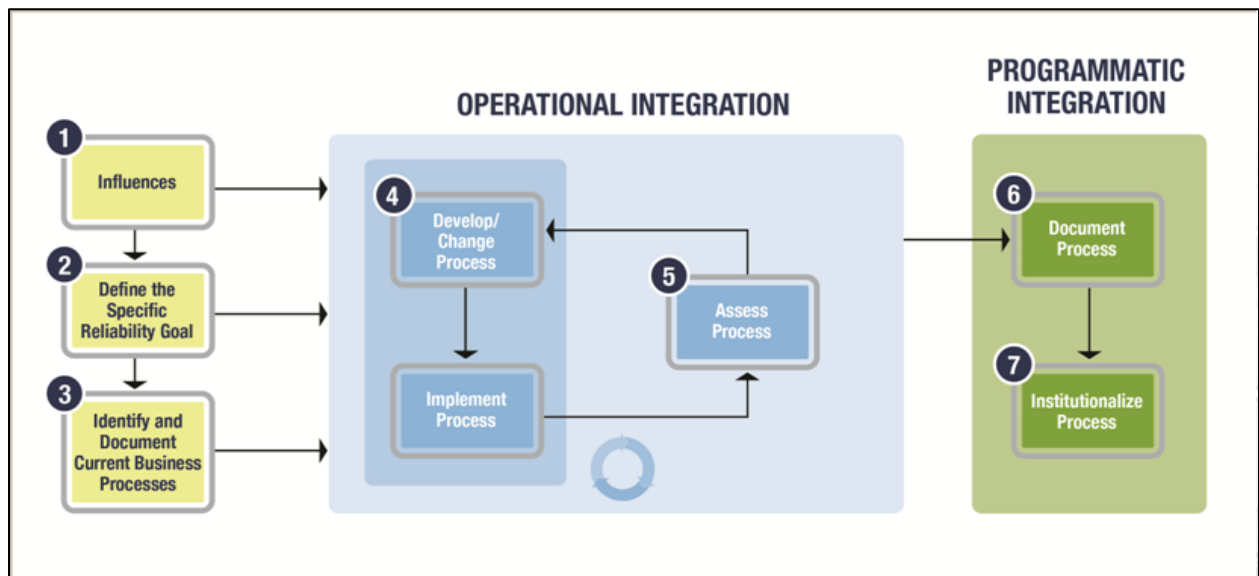
This template/tool is intended to help walk a group of stakeholders through the input process. The objectives of this tool are:

- To support the integration of business processes within and between agencies working towards a common reliability goal.
- To promote operational and institutional integration within and between agencies.
- To utilize all seven steps of the methodology for developing, analyzing, and integrating business processes.
- To provide a place to store the documentation and efforts of the group.

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[1] *eTool for Business Processes to Improve Travel Time Reliability*. FHWA.
www.ops.fhwa.dot.gov/plan4ops/focus_areas/organizing_for_op/shrp2_le34_etool.htm

What type of process will you be assessing?

Choose one:
- ☐ Incident Management
- ☐ Work Zone Management
- ☐ Special Event Management
- ☐ Weather Management
- ☐ Multiagency Operations/Traffic Management

Choose a case study that best matches the process you are evaluating:
(Note that the case studies listed below are summarized in the SHRP2 Report: *Integrating Business Processes to Improve Travel Time Reliability*[2].)

Choose one:
- **Incident Management**
  - ☐ Case Study 1: Washington State DOT Joint Operations Policy Statement and Instant Tow Dispatch Program
  - ☐ Case Study 2: Florida Road Rangers
  - ☐ Case Study 3: United Kingdom Active Traffic Management
- **Work Zone Management**
  - ☐ Case Study 4: North Carolina DOT Traffic and Safety Operations Committee
  - ☐ Case Study 5: Michigan DOT Work Zone Traffic Control Modeling
- **Special Event Management**
  - ☐ Case Study 6: Kansas Speedway Special Event Traffic Management
  - ☐ Case Study 7: The Palace of Auburn Hills, Special-Event Traffic Management (Michigan)
- **Weather Management**
  - ☐ Case Study 8: I-80 Winter State Line Closures (California and Nevada State Line)
- **Multiagency Operations/Traffic Management**
  - ☐ Case Study 9: AZ Tech Regional Archived Data Server (Arizona)
  - ☐ Case Study 10: San Pablo Avenue Signal Retiming (California)

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[2] Transportation Research Board (TRB). (2011). "Integrating Business Processes to Improve Travel Time Reliability." Strategic Highway Research Program (SHRP2), Report: S2-L01-RR-1, National Academy of Sciences, Washington, D.C. http://www.trb.org/Publications/Blurbs/165283.aspx

Step 1: Identifying Influences

The first step in this methodology involves determining what influences made it apparent that there is a need to improve business processes in order to improve travel time reliability. There are three categories of influences identified in the They are top down, also known as "big directive", event driven, and needs or opportunity based, also known as "grassroots". Table 3.1 from the SHRP2 Report *Guide to Integrating Business Processes to Improve Travel Time Reliability*[3] is shown below and shows the tier levels for process influences.

TABLE 3.1. TIER LEVELS FOR PROCESS INFLUENCES		
TIER	**DESCRIPTION OF INFLUENCE**	**CASE STUDIES**
Tier 1: Big Directive (Top Down)	Big-directive influences are typically legislative requirements or management-level directives. Broad external factors such as safety concerns, economic parameters, or larger governmental accountability initiatives also may drive the influence. Big-directive influences tend to greatly accelerate process development, integration, and change and also increase accountability of those responsible for implementing.	• WSDOT Joint Operations Policy Statement and Instant Tow Program • NCDOT Traffic and Safety Operations Committee • Kansas Speedway Special Event Traffic Management
Tier 2: Event Driven	Event-driven influences are caused by a specific event or hazard that prompts a need for improving process integration. The initial event can prompt change, but if the event does not recur, momentum or support for the change can erode over time.	• MDOT Work Zone Traffic Control Modeling • NDOT I-80 Winter State-Line Closures
Tier 3: Needs Based/ Opportunity Based (Grassroots)	Needs-based/opportunity-based influences evolve over time according to recurring needs. These types of changes typically affect day-to-day operations and begin at the grassroots level of an organization.	• Florida Road Rangers Freeway Service Patrol Program • The Palace at Auburn Hills Special Event Traffic Management • San Pablo Avenue Signal Retiming • AZ Tech Regional Archived Data Server • United Kingdom Active Traffic Management

To complete Step 1, choose the type of influence applicable to the current process from the drop-down menu below. Use the box below to describe the influences for the process that caused a need to improve travel time reliability.

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[3] Transportation Research Board (TRB). (2011). "Guide to Integrating Business Processes to Improve Travel Time Reliability." Strategic Highway Research Program (SHRP2), Report S2-L01-RR-2, National Academy of Sciences, Washington, D.C. http://www.trb.org/Publications/Blurbs/165284.aspx

Choose the type of influence:

- ☐ Top Down
- ☐ Event Driven
- ☐ Bottom-up

Please describe your influences:

Step 2: Defining the Specific Reliability Goal

The second step in this methodology is to identify and define the reliability **goal or goals** that the agency can use to measure the effect of the business process implemented to improve travel time reliability. A reliability goal focuses agency efforts on the problem at hand regardless of any specific process used to achieve that goal. Goals also assist in the development of benchmarks that an agency can use to determine how well the process is meeting the identified need.

Reliability goals may include:
- Reducing incident clearance time
- Providing 24/7 operations
- Improving resource efficiency
- Reducing congestion
- Reducing delays

Use the area below to describe the reliability goal(s) for this process. Be sure to choose a <u>measurable</u> goal related to improving travel time reliability.

Please describe your reliability goal(s):

Step 3: Identifying and Documenting Current Business Processes

Once reliability goals are identified, it is important to identify and document the current business process and workflow. A business process defines a series of actions or activities that result in a specific or desired outcome to accomplish a specific organizational goal. The process includes actions that are taken every day, but the connections between all stakeholders, their roles, the communication or data flows, and the intersection of those data or communication flows may not have been formally mapped at this point. The purpose of this step is to formally document the current process to visually facilitate a better understanding of that process.

There are important benefits in documenting the existing or baseline processes. One benefit is understanding how the data flows, the decisions points, and where the process integration occurs. Understanding the critical entities and actions that effect travel time reliability and performance on a broader scale will help an agency identify areas for improvement. By documenting the current processes, the agency or stakeholders will also be able to identify critical gaps or issues and key components or enablers to establish a more efficient process. Documenting the processes also helps to identify stakeholders that are missing from the current process, and formalize roles and responsibilities to improve the continuity of the business process with personnel changes.

To describe your existing process, either insert a pertinent Business Process Model or describe the process in the box below.

Please describe your existing process (optional):

Step 4: Developing/Changing and Implementing Process

This step is broken down into two parts. The first, develop or change the process, builds upon the process map built in step 3. Solutions to identified needs and goals are addressed here and incorporated into the existing process maps. Utilizing the influences identified in Step 1 will help to guide the changes in processes to improve travel time reliability. Involving key personnel that work closest to the process is beneficial, as they will have extra incentive to produce an effective process.

Once the changes to the business process or processes have been identified, the updated or new process can be implemented. The approach to this implementation will vary based on factors such as the number of agencies involved and the depth of the process within the agency's broader operations strategy. It is important to be sure **to involve all stakeholders in the implementation stage**, as buy-in is key to the success of the overall process. Stakeholders may include a broad range of people, from office managers to workers in the field and their input will be important to the successful implementation of the identified business process changes needed to improve travel time reliability.

Because step 4 may have multiple iterations before it is deemed acceptable to move on, this template will allow the input of information for three iterations. This document may be modified to contain additional (or fewer) iterations.

Iteration 1:

To describe your existing process, either insert a new or changed Business Process Model or describe the process in the box below.

Add new or changed process documents in Iteration 1:

Please describe your newly developed or changed process in Iteration 1 (optional):

Please describe how you will implement your process in Iteration 1:

Iteration 2:

To describe your existing process, either insert a new or changed Business Process Model or describe the process in the box below.

Add new or changed process documents in Iteration 2:

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Please describe your newly developed or changed process in Iteration 2 (optional):

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Please describe how you will implement your process in Iteration 2:

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Iteration 3:

To describe your existing process, either insert a new or changed Business Process Model or describe the process in the box below.

Add new or changed process documents in Iteration 3:

Please describe your newly developed or changed process in Iteration 3 (optional):

Please describe how you will implement your process in Iteration 3:

Step 5: Assessing Process

Step 5 involves assessing the process. Some level of assessment is important to determine the effectiveness of that process. Step 5 is the third part of the iterative cycle introduced in step 4. The results of this assessment are then either fed back into step 4 in order to make additional changes, or are used in moving forward to the next step of the overall process.

Ensuring that a measure of success, a method for continuous evaluation, and data needed to complete the evaluation is important. These things provide a means to communicate the effectiveness of the process with senior managers and vital staff. By measuring the effectiveness of the process, opportunities are available to periodically evaluate performance in an ongoing effort for improvement of travel time reliability. It is also important to assess processes against pre-implementation conditions; this will provide an opportunity to determine if any changes made to business processes are effective at improving travel time reliability.

Iterations created in step 4 are viewed and edited for step 5.

The requested information is designed to assist the group in completing this step and determining the next step forward.

Iteration 1:

Please describe the <u>performance measures</u> you will be assessing in Iteration 1:

Please describe the <u>methods you will use to evaluate</u> your performance measures in Iteration 1:

Please describe the <u>data you will need to evaluate</u> your performance measures in Iteration 1:

Please enter the <u>collected data you need to evaluate</u> your performance measures in Iteration 1:

Please detail the <u>findings/results of your evaluation</u> in Iteration 1:

Iteration 2:

Please describe the <u>performance measures</u> you will be assessing in Iteration 2:

[ ]

Please describe the <u>methods you will use to evaluate</u> your performance measures in Iteration 2:

[ ]

Please describe the <u>data you will need to evaluate</u> your performance measures in Iteration 2:

[ ]

Please enter the <u>collected data you need to evaluate</u> your performance measures in Iteration 2:

[ ]

Please detail the <u>findings/results of your evaluation</u> in Iteration 2:

[ ]

Iteration 3:

Please describe the <u>performance measures</u> you will be assessing in Iteration 3:

Please describe the <u>methods you will use to evaluate</u> your performance measures in Iteration 3:

Please describe the <u>data you will need to evaluate</u> your performance measures in Iteration 3:

Please enter the <u>collected data you need to evaluate</u> your performance measures in Iteration 3:

Please detail the <u>findings/results of your evaluation</u> in Iteration 3:

Step 6: Documenting Process

Documentation typically occurs once the process has been implemented and proven effective. Documentation is intended to provide detailed steps of the business process, the evaluation process, and the stated benefits and lessons learned. Documentation should also include the roles and responsibilities of the stakeholders involved in the future.

Documentation will help to demonstrate performance against the goals identified in Step 2 and will also facilitate easier updates and modifications to the process in the future. If time is not available to prepare detailed process models, it is recommended that at minimum, key steps, relationships, information exchanges, and other details be documented. These types of documentation can be achieved through developing internal memorandums, informal memorandums of understanding (MOU), user guides, or other complex agreements between stakeholders.

Below is an area available to describe the documentation for this process or insert documentation. Large documents, such as user guides, should be attached.

Please describe how you will document your process/changes:

Step 7: Institutionalizing the Process

The seventh and final step is institutionalizing the process. It is the way in which a new or changed process is incorporated into existing policies or management programs. Institutionalizing typically starts at the higher levels of an organization, but must be able to survive changes in management and personnel. The most successful business processes rely on linking the process to firmly established agency goals, objectives, or mission-critical activities.

There are four main strategies and considerations to keep in mind when institutionalizing processes. The first item to keep in mind is the importance of buy-in and ongoing support for the process. If the stakeholders do not support and encourage the use of identified business processes, it may not remain a viable process. The second strategy that will greatly assist in institutionalizing business processes is developing formal documentation that is accessible and available to all stakeholders. This formal documentation and accessibility of the documentation will help institutionalize implemented processes to improve travel time reliability.

The third consideration is focusing on the sustainability of the documentation. Formal agreements tend to last longer than informal ones. Lastly, remember that performance management programs can provide an important back-check and justification for continued support of implemented processes. A success performance management program extends beyond monitoring and reporting on key performance indicators by using the outcomes to better inform management and programmatic decisions.

Use the text box below to describe how the process will be institutionalized. Keep the strategies and considerations discussed above in mind when completing this section.

Please describe how you will institutionalize your process: