U.S.Department of Transportation
Federal Highway Administration

**Office of Operations
Research and Development**

SSP-BC

SAFETY SERVICE PATROL BENEFIT-COST (SSP – BC) TOOL

The Safety Service Patrol (SSP) is an effective Traffic Incident Management (TIM) strategy that aims to improve traffic mobility and safety during the occurrence of incidents. In order to evaluate the comprehensive effectiveness, the Federal Highway Administration (FHWA) Saxton Transportation Operations Lab has developed a web-based user-friendly tool, SSP-BC, to take a closer look into cost-effective scenario planning before, during, and after traffic incidents occur. Equipped with a set of multiple regression equations for estimating travel delay, fuel consumption, emissions, secondary incidents and calculating benefit cost ratios, this tool will enable better decision making by state DOTs and local agencies on SSP programs.

HOW IT WORKS

SSP project-specific details, such as location, number of segments, annual number of incidents and annual total program cost, are entered into the tool followed by road segment information. This information could include artifacts such as roadway geometry, traffic information, and additional incident information.

The tool pulls calibrated prediction equations and corresponding factors from the database to compute benefits and costs. Once the data has been collected, the tool then summarizes the calculated benefit elements and benefit-cost ratio of the SSP program and prepares an automated PDF report of the results.

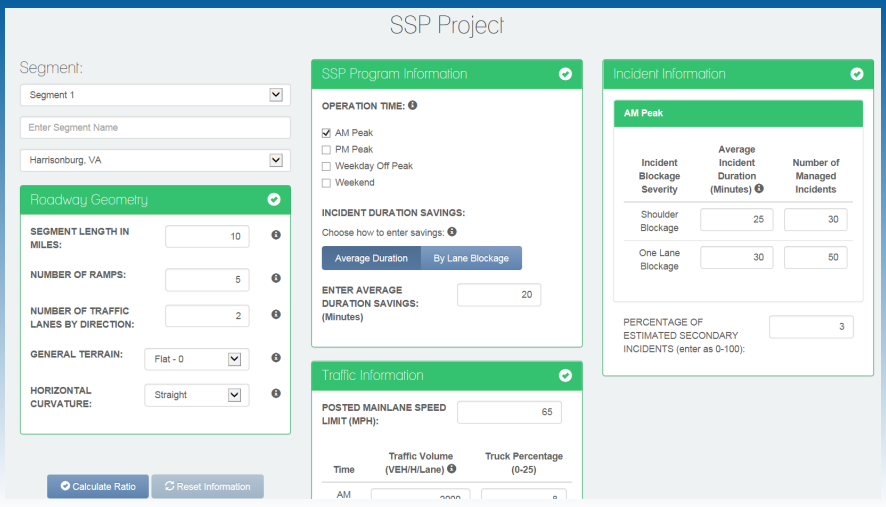
RESEARCH APPROACH

Existing SSP benefit-cost analysis tools were reviewed in order to document their capabilities, user-defined parameters and gaps in analytical results. Information gathered from these reviews was then used to develop a comprehensive list of future needs, such as TIM strategies that have not yet been addressed by any web-based tools, and TIM analysis areas that show inconsistent results among the currently utilized tools.

The SSP-BC tool also includes the capability to estimate travel delay, fuel consumption, emissions and secondary incidents. The data and equations encompassed in the database are derived directly from publicly available sources and simulation runs, which consider different incident information (i.e., number of lanes, lane blockage, duration and location) under different traffic conditions. The computations employ a hybrid statistical-simulation methodology in which parameters from regression analysis are combined with results from simulation runs to improve the fit of the regression model.

The SSP-BC tool is the first version of the Comprehensive TIM-BC tool, which is to be released in August 2015 as the final product of this research. TIM-BC will be a suite of tools for benefit-cost analysis of TIM strategies including SSP, driver removal laws, authority removal laws, shared quick-clearance goals, pre-established towing service agreements, dispatch collocation, TIM task forces and Strategic Highway Research Program 2 (SHRP2) Training.

A screenshot of the web-based tool shows the different options available, such as location, traffic information, and physical roadway characteristics.



For more information, please contact:
Taylor.Lochrane@dot.gov