Traffic Incident Management Benefit-Cost Tool (TIM-BC)

December 4, 2015

U.S. Department of Transportation
FEDERAL HIGHWAY ADMINISTRATION

Overview

- Incidents on Highways:
  - Time
  - Emissions
  - Infrastructure damages
- Various Traffic Incident Management (TIM) strategies
  - Goal:
    - Responder safety
    - Safe, quick clearance
    - Prompt, reliable, interoperable communications[1]

[1]National Traffic Incident Management Coalition, National Unified Goal for Traffic Incident Management: Working Together for Improved Safety, Clearance, and Communications. http://www.transportation.org/sites/ntimc/docs/NUG%20Unified%20Goal-Nov07.pdf

Overview

- Determine the most effective TIM strategy
  - Evaluate the benefits and costs (B/C)
  - Compare effectiveness
- Various tools for B/C ratios of TIM strategies :
  - A wide range of estimation methodologies
  - B/C ratio estimation results:
    - Vary widely
    - Sensitive to choices of methodologies
  - Numerous Benefit-Cost (B/C) estimation studies are Costly

Project Objective

- Objective:
  - Develop a TIM Benefit/Cost estimation tool
    - Methodologies
      - Standardized
      - Universal
      - Equitable
    - Simple to use
    - Less data intensive

Project Objective

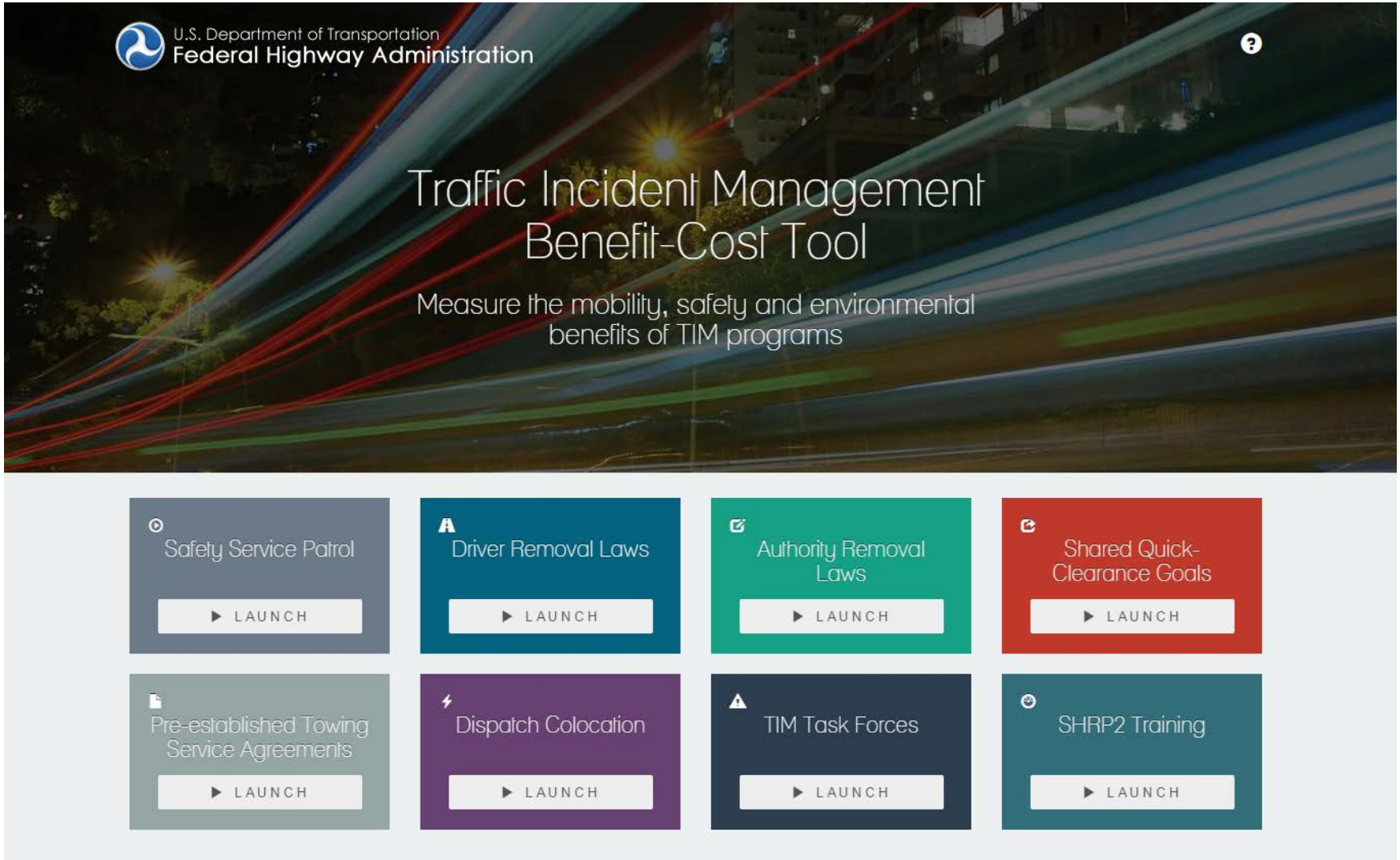
- Develop a user-friendly TIM Benefit-Cost tools evaluating a series of TIM strategies
  - Service Safety Patrol, Driver removal law, authority removal law, shared quick-clearance goals, pre-established towing service agreements, dispatch colocation, TIM task-forces, SHRP2 training.
- Solicit feedback on the tools from practitioner webinar and a focus (advisory) group
- Be able to consistently compare the benefits and costs of various TIM strategies in many scenarios

TIM-BC Tool

- Web-based
- User-friendly
- Assist
  - State and local engineers
  - Decision-makers
- Evaluate and compare the monetary value of TIM programs
- FHWA Official TIM-BC Website

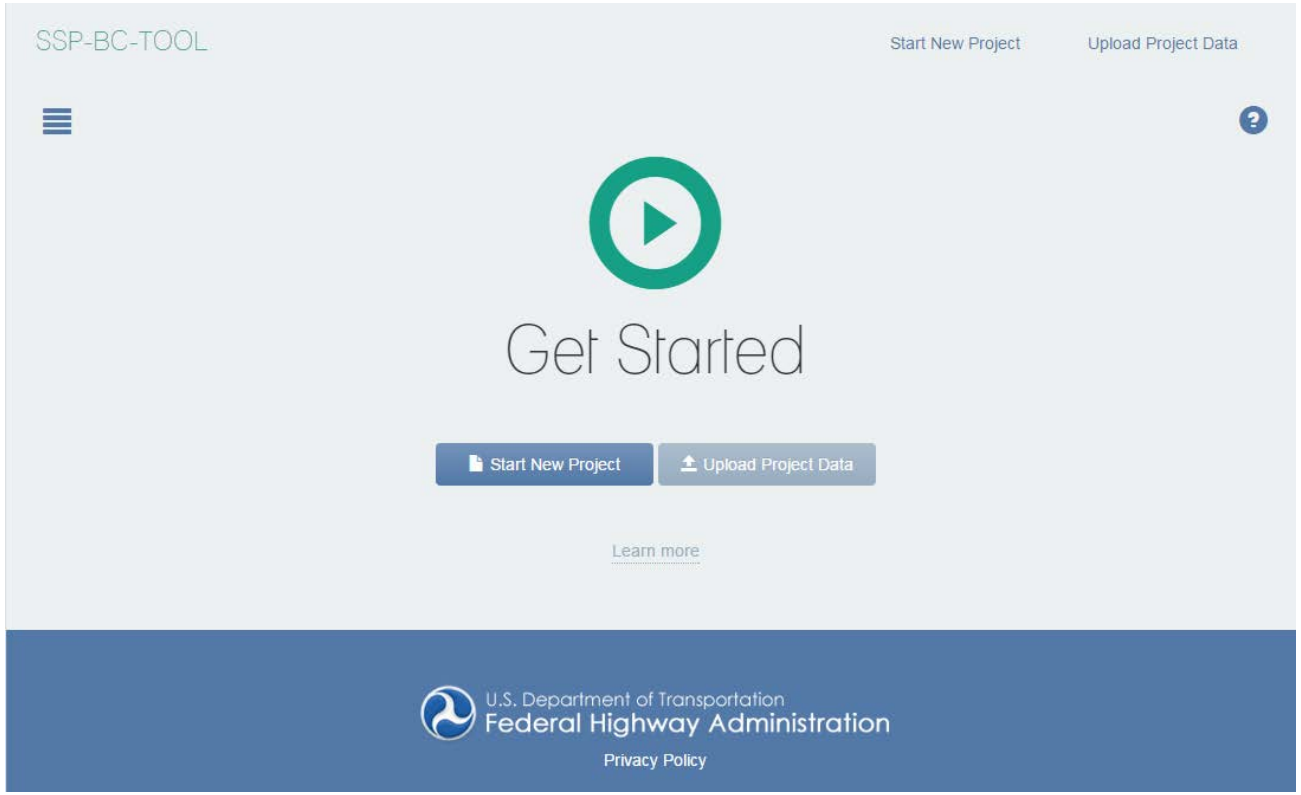
http://www.fhwa.dot.gov/software/research/operations/timbc/

TIM-BC Main Interface



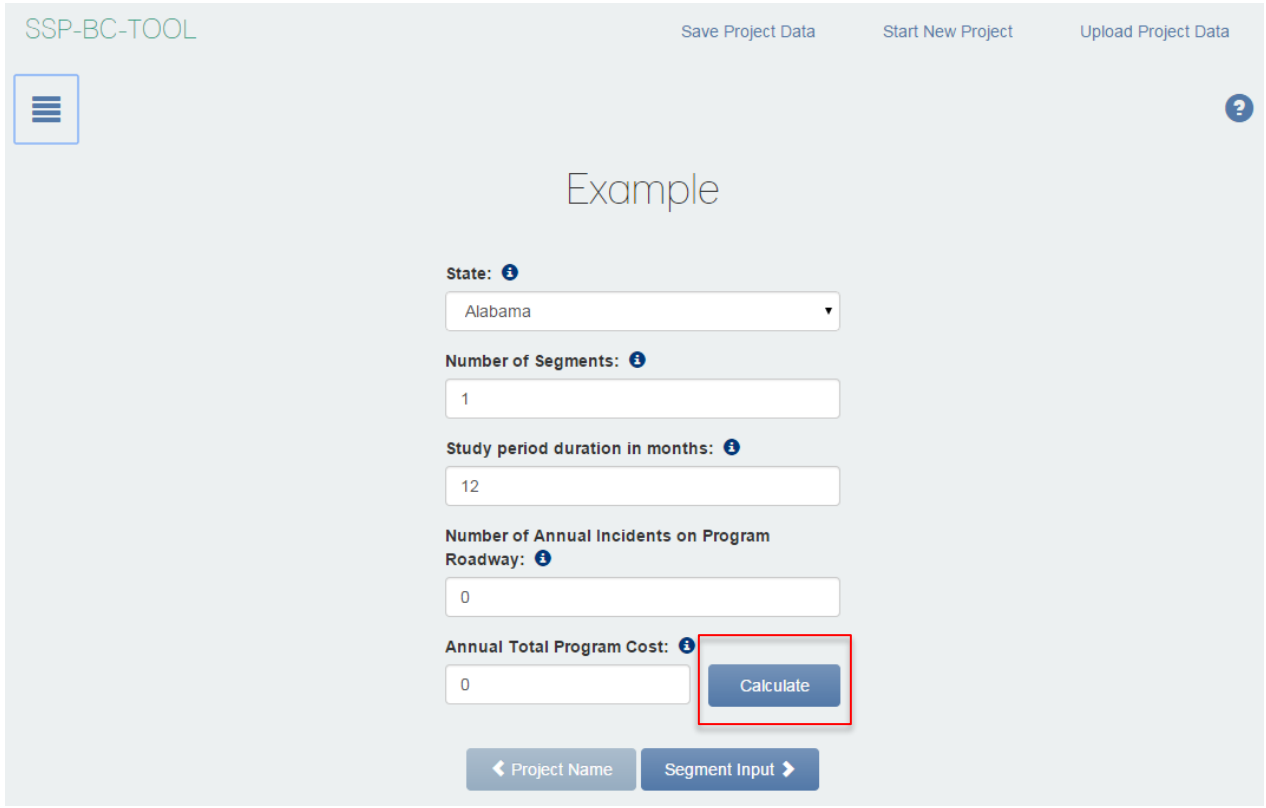
SSP-BC Tool (1)

- Home Screen
  - Start a new SSP project
  - Load an existing SSP project



SSP-BC Tool (2)

- Input Project Details
  - E.g. Location, number of segments, annual number of incidents, annual total program cost



SSP-BC Tool (3)

- Annual Cost Calculation

SSP-BC Too

Calculate Program Cost

Annual Total: $ 161280

Annual Fixed Cost: 0

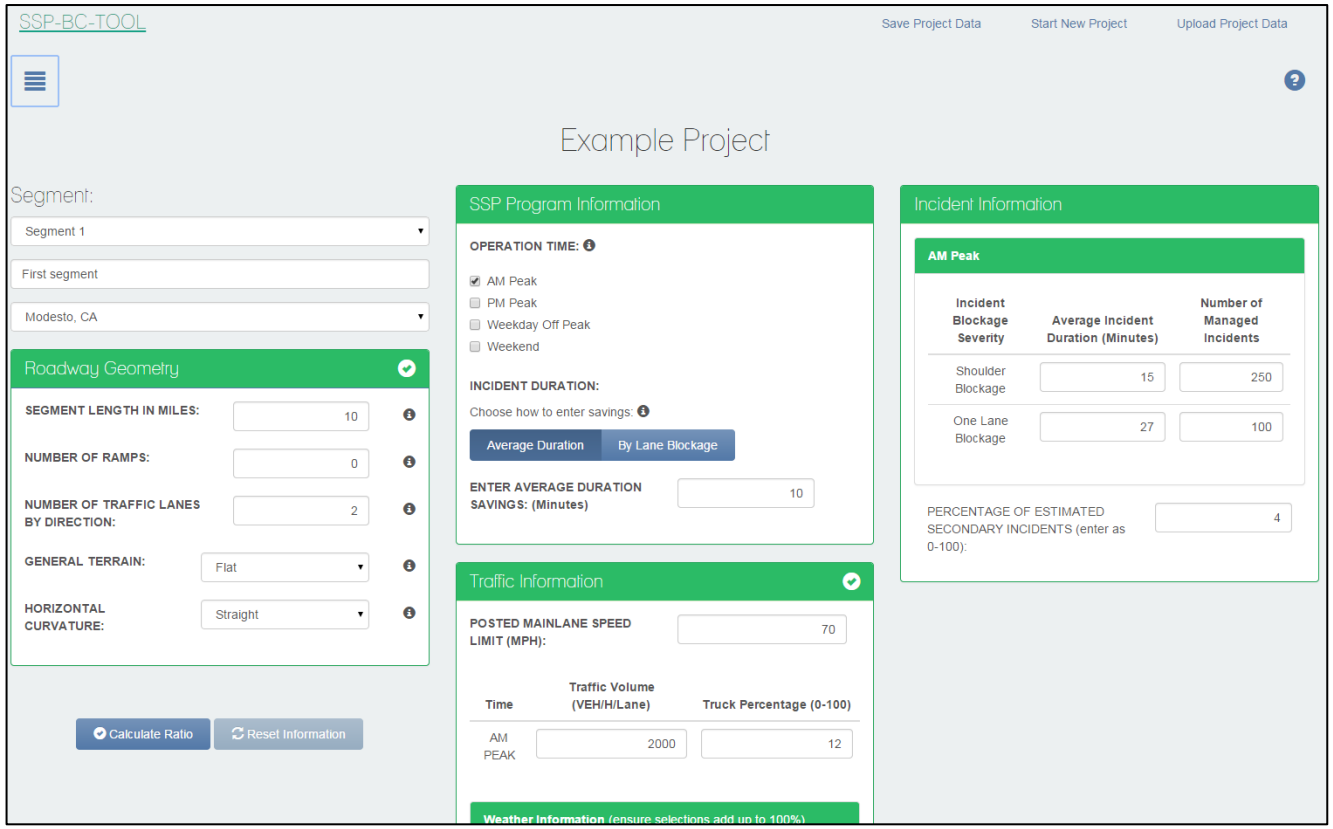
Patrol Vehicle Type	Number of Vehicles	Driver's Hourly Rate ($/hr)	Working Hours per Day	Working Days per Month	Fuel (gal/month)	Provided Gas ($/month)	Vehicle Maintenance ($/month)	Other ($/month)	Monthly Total
Vehicle Type	2	40	8	21	0	0	0	0	$ 13440
Vehicle Type	0	0	0	0	0	0	0	0	$ 0
Vehicle Type	0	0	0	0	0	0	0	0	$ 0
Vehicle Type	0	0	0	0	0	0	0	0	$ 0
Vehicle Type	0	0	0	0	0	0	0	0	$ 0
Vehicle Type	0	0	0	0	0	0	0	0	$ 0
Vehicle Type	0	0	0	0	0	0	0	0	$ 0
Vehicle Type	0	0	0	0	0	0	0	0	$ 0
Vehicle Type	0	0	0	0	0	0	0	0	$ 0
Vehicle Type	0	0	0	0	0	0	0	0	$ 0

Submit | Add Row

You've added a new table row. Undo?

SSP-BC Tool (4)

- Input Segment Information
  - E.g. roadway geometry, traffic information, incident information

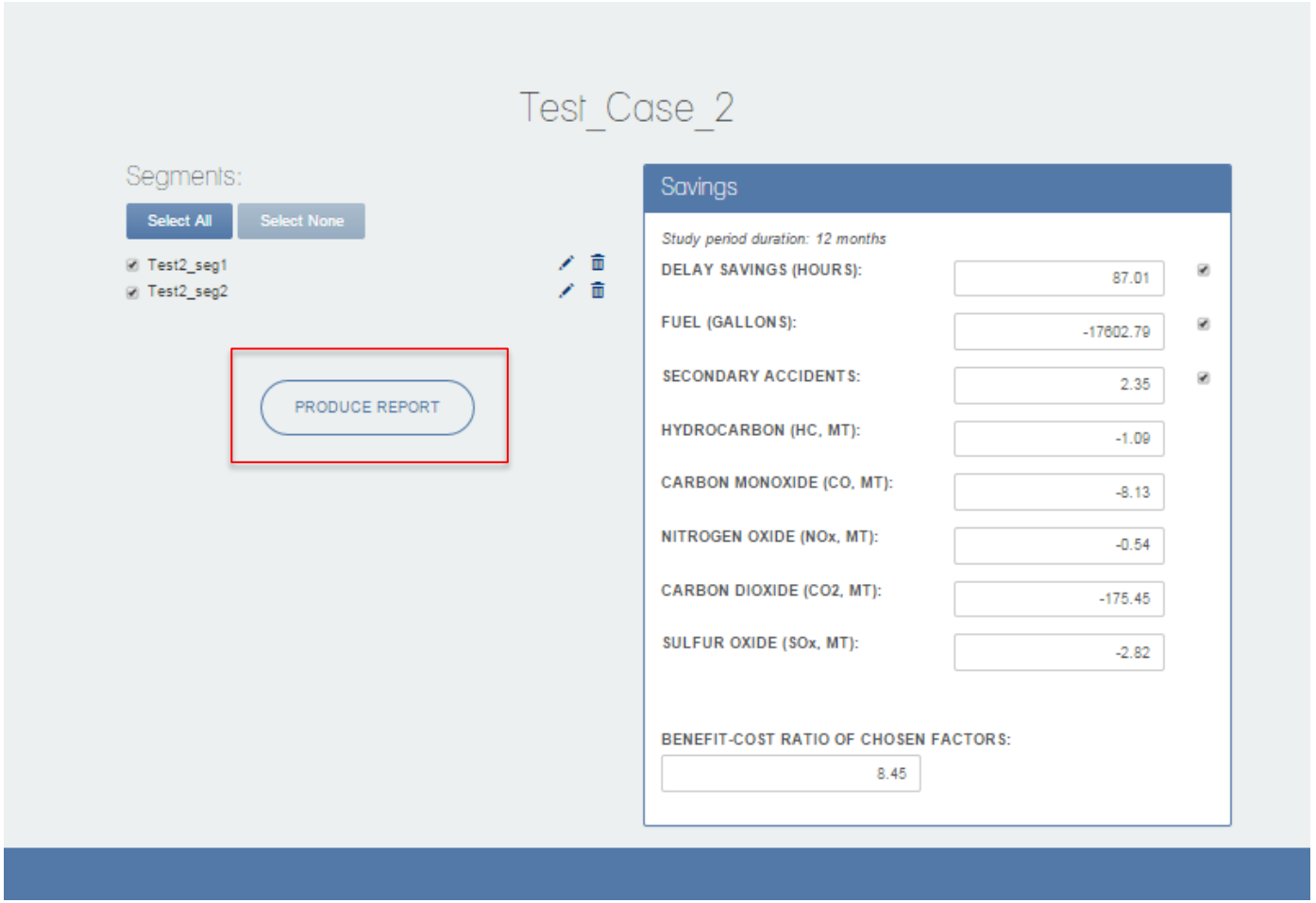


SSP-BC Tool (5)

- Project Output
  - Summarizes the calculated benefits elements and benefit-cost ratio of the SSP program
    - Benefits: delay savings (hours), fuel savings (gallons), secondary incidents prevented, and emissions savings (MT)
  - Export PDF reports with the results

SSP-BC Tool (6)

- Project Output – Summary page + PDF report



Thank you!

Contact

Pavle Bujanović, Ph.D.
CARMA Program Technical Manager
FHWA Office of Operations R&D

Email
pavle.bujanovic@dot.gov