Safety Focused Decision Making Guide Training

Webinar Presentation

September 2013

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Safe Roads for a Safer Future
Investment in roadway safety saves lives

http://safety.fhwa.dot.gov

Webinar Agenda

- Introduction
- Safety Focused Decision Making Framework Overview
- Safety Focused Decision Making using Safety Planning Tools
- Review of Safety Focused Decisions Making Framework Phases
- Questions and Group Discussion

Introduction

- The "Tools, Practices, and Training for System Wide Safety Impact Prediction Project" was commissioned to analyze the use of currently available safety planning tools

- The end product, the Safety Focused Decision Making Guide, was informed by four related research endeavors concerned with safety planning tools (depicted to the right)

2 Case Studies Report

3 Peer Exchange

1 Synthesis Report

4 Gap Analysis Report

Safety Focused Decision Making Guide

Safety Focused Decision Making Framework Overview
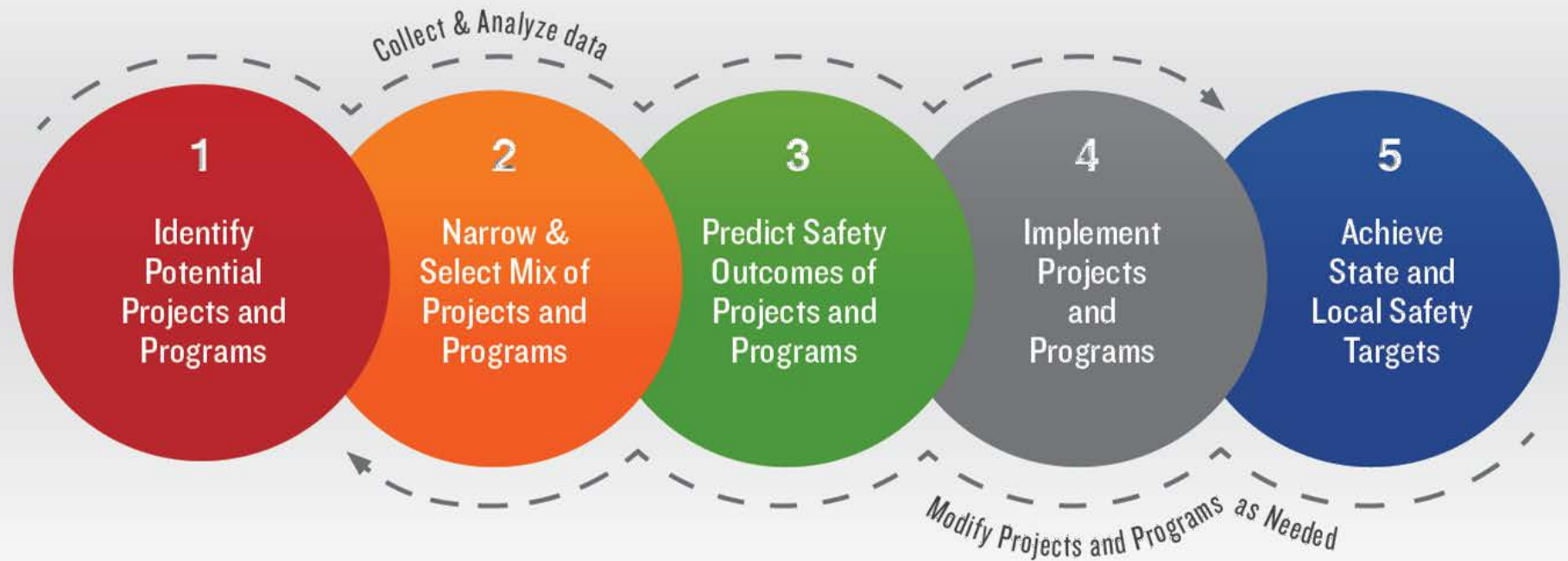
Safety Focused Decision Making using Safety Planning Tools

- A number of nationally available safety analysis tools currently exist to support roadway safety performance planning and decision making

- The representative list of tools in the table have been directly supported by FHWA

Tool	Primary Purpose	1 Identify Potential Projects and Programs	2 Narrow & Select Mix of Projects and Programs	3 Predict Safety Outcomes of Projects and Programs	4 Implement Projects and Programs	5 Achieve State and Local Safety Targets
Crash Modification Factors (CMF) Clearinghouse	This web-based repository provides information on all documented CMFs and Crash Reduction Factors (CRFs) in a central location to help transportation professionals properly estimate the crash reduction of selected countermeasures when applied to projects.	○	●	●	○	●
FHWA Geographic Information System (GIS) Tools	GIS software links safety event data such as crashes and geographic data such as roads and roadway features to allow for advanced spatial analysis and mapping.	●	●	◐	◐	●
Highway Safety Manual (HSM)	The HSM provides a framework for safety that aids practitioners in performing data analysis, selecting countermeasures, prioritizing projects, comparing alternatives, and quantifying and predicting the safety performance of roadway elements during the planning, design, construction, and operation phases of project development.	●	●	●	●	◐
SafetyAnalyst	SafetyAnalyst is a set of computerized analytical tools to identify safety improvement needs and supports use of cost-effectiveness analysis to develop a system-wide program of site-specific improvement projects.	●	●	◐	○	●
Systemic Safety Project Selection Tool	The Systemic Safety Project Selection Tool involves widely implemented improvements based on high-risk roadway features correlated with specific severe crash types. It helps agencies broaden their traffic safety efforts and consider risk as well as crash history when identifying where to make low-cost safety improvements.	●	●	●	○	●

○ Tool not typically applicable to step   ◐ Tool somewhat applicable to step   ● Tool highly applicable to step

Safety Planning Tool Links:
CMF - http://www.cmfclearinghouse.org/
GIS – http://www.gis.fhwa.dot.gov/
HSM – http://safety.fhwa.dot.gov/hsm/
SafetyAnalyst – http://www.safetyanalyst.org/
Systemic - http://safety.fhwa.dot.gov/systemic/index.htm

Identify Potential Projects and Programs

Identifying the right projects and programs to undertake at the appropriate times is a necessary component to improving transportation safety

Applying Safety Planning Tools

GIS data can be used by states and MPOs by leveraging the geo-coded information in the identification of hot-spot locations where safety improvement projects could have a large/immediate impact

Notable Practice Case Study

Data-driven decision making and continuous review of performance is deeply ingrained in Washington State's Department of Transportation

WSDOT Safety Planning & Programming Steps

Safety Planning & Programming Steps
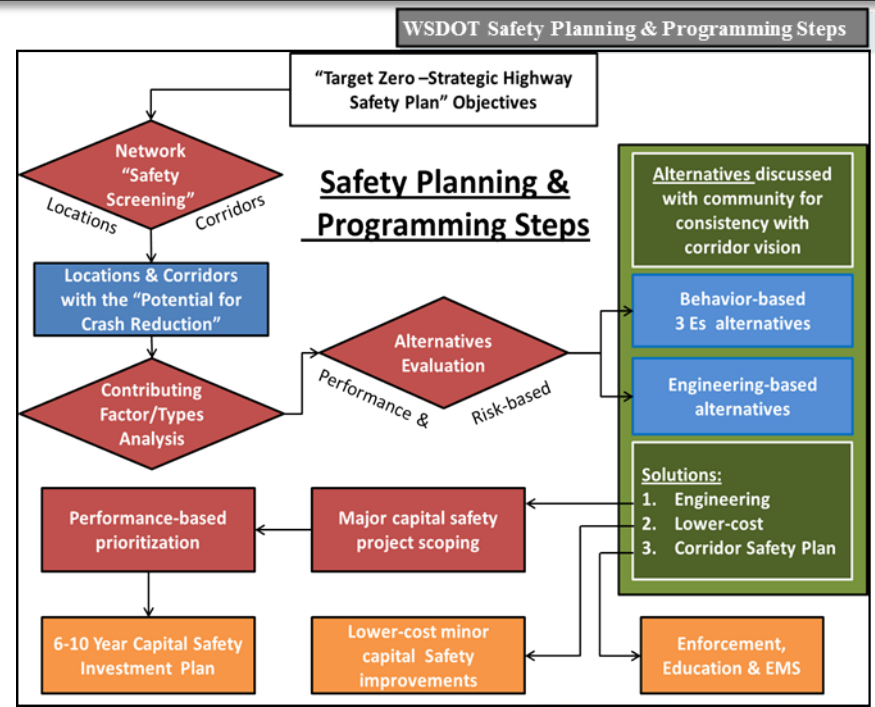
Red – Engineering Analysis

Green – Planning Involvement

Orange – Programming Actions

Blue – Work Product

Narrow and Select Mix of Projects and Programs

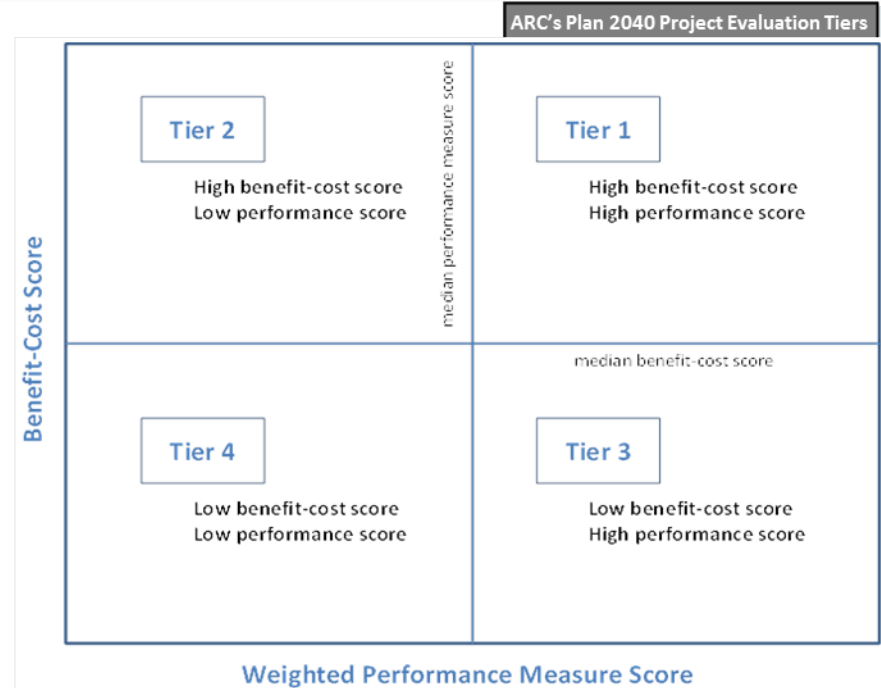Using a formal prioritization process to select the projects/programs most important to complete in the short and longer term is the basis of an effective planning environment

Applying Safety Planning Tools

Systemic Approach provides a comprehensive method for safety planning and implementation that supplements and compliments traditional site analysis

Notable Practice Case Study

The Atlanta Regional Commission (ARC) has developed an approach to evaluating potential projects and places projects into one of four tiers to allow for comparison

ARC's Plan 2040 Project Evaluation Tiers

Tier 2
High benefit-cost score
Low performance score

Tier 1
High benefit-cost score
High performance score

median performance measure score

median benefit-cost score

Tier 4
Low benefit-cost score
Low performance score

Tier 3
Low benefit-cost score
High performance score

Benefit-Cost Score

Weighted Performance Measure Score

http://www.atlantaregional.com/plan2040

Predict Safety Outcomes of Projects & Programs

FHWA encourages states and MPOs to take a holistic approach to safety planning and begin using available tools to predict outcomes at the programmatic level

Applying Safety Planning Tools

CMF Clearinghouse provides transportation professionals with a web-based repository of CMFs and associated documents/training materials to support the proper application of CMFs and accurately predict outcomes

Notable Practice Case Study

Missouri's SHSP identifies strategies in the areas of education, enforcement, engineering, and public policy that were selected based on documented evidence supporting their effectiveness

MISSOURI'S BLUEPRINT TO SAVE MORE LIVES

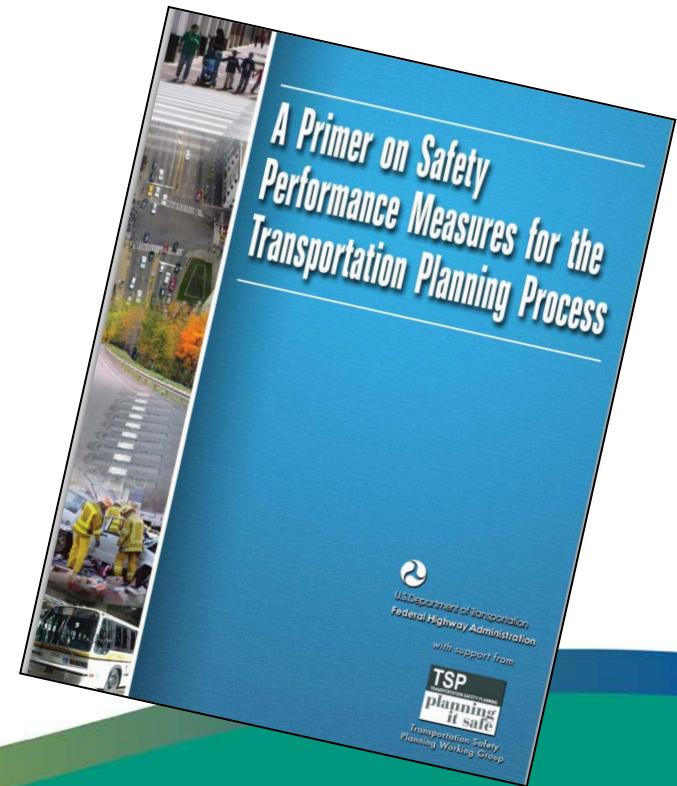2012-2016
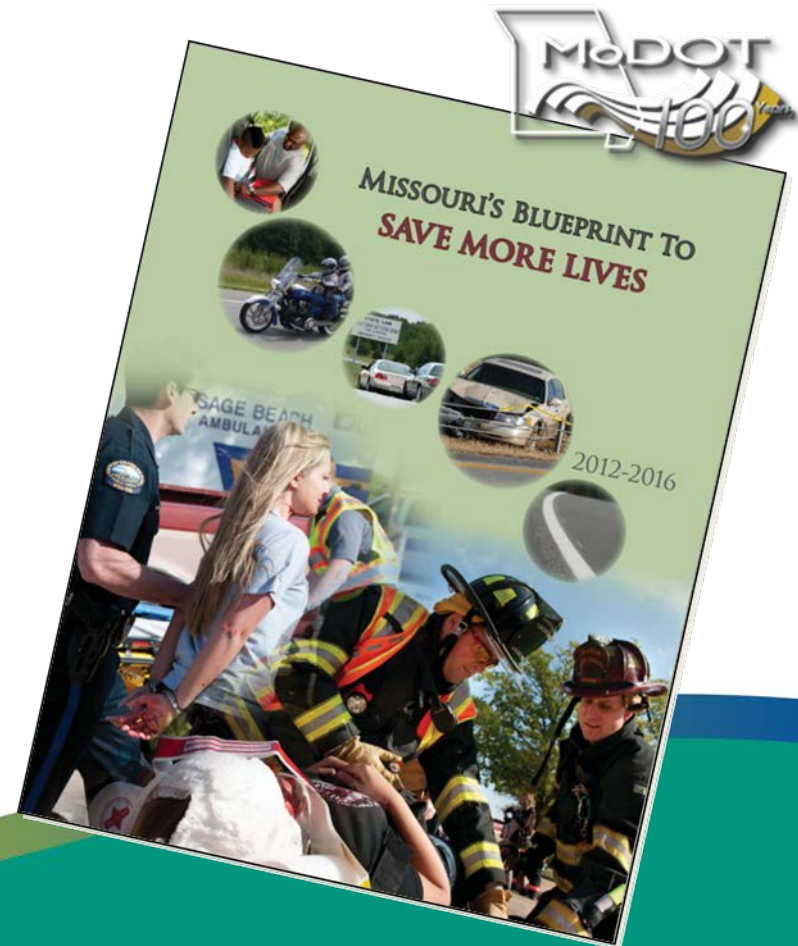
Implement Projects and Programs

It is necessary to develop a detailed implementation plan that explicitly defines timelines, budget, performance measures, and roles/responsibilities to achieve desired outcomes

Applying Safety Planning Tools

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Notable Practice Case Study

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A Primer on Safety Performance Measures for the Transportation Planning Process

U.S. Department of Transportation
Federal Highway Administration

with support from

TSP
planning it safe
Transportation Safety
Planning Working Group

http://safety.fhwa.dot.gov/hsip/tsp/fhwahep09043/

Achieve State and Local Safety Targets

Once projects/programs are underway, states and MPOs with strong performance management frameworks track progress toward achieving their goals and intended safety outcomes through the use of reporting tools such as performance dashboards

Applying Safety Planning Tools

SafetyAnalyst has a Countermeasure Evaluation Tool, which provides an analysis of implementation success, performing before/after evaluations using the Empirical Bayes (EB) approach

Notable Practice Case Study

NCDOT's Executive Dashboard is used to track progress against strategic goals and enables NCDOT's leaders to see trends over time, allowing them to make data-driven decisions based on performance

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
EXECUTIVE PERFORMANCE METRICS
Fourth Quarter Results for State Fiscal Year 2012

Goal	#	Performance Measure	SFY11 Result	SFY12 Target	SFY YTD Result (as of 06/30/12)	Annual Trend
Make our transportation network safer	1.1	Statewide network crash rate[1]	233	235 or less	230	●
	1.2	Statewide network fatality rate[1]	1.25	1.64 or less	1.15	●
	1.3	Percentage of surveyed North Carolina drivers using a safety belt[2]	89.5%	90.0% or greater	88.7%	●
Make our transportation network move people and goods more efficiently	2.1	Average statewide accident clearance time	66 min.	70 min. or less	61 min.	●
	2.2	Travel time index for surveyed interstates	1.02	1.04 or less	0.98[5]	●
	2.3	Percentage of planned ferry runs completed as scheduled	98%	95.0% or greater	97%	●
	2.4	Percentage of planned passenger trains arriving on schedule[4]	New Measure	80.0% or greater	58.4%	N/A[4]
	2.5	Percentage increase in public transit ridership[4]	New Measure	5% or greater	Results Unavailable	N/A[4]
Make our infrastructure last longer	3.1	Percentage of bridges rated in good condition	71.8%	65.0% or greater	66.2%[6]	●
	3.2	Percentage of pavement miles rated in good condition[2]	67.8%	70.0% or greater	68.9%	●
	3.3	Average highway feature condition scores (excluding pavement and bridges)[2]	87.1	84 or greater	89.7	●
	3.4	Average rest area condition scores	94	90 or greater	97	●
Make our organization a place that works well	4.1	Percentage of work program projects on schedule[3]	73%	85% or greater	75%[3]	●
		A. Percentage of centrally managed STIP projects let on schedule[7]			80%	
		B. Percentage of division managed STIP projects let on schedule[7]			72%	
		C. Percentage of municipal and locally managed STIP projects let on schedule[7]			51%	
	4.2	Percentage of construction projects completed on schedule	77%	80% or greater	85%	●
	4.3	Total budget overrun for completed construction projects[4]	New Measure	5% or less	-2%	N/A[4]
	4.4	Percentage of the overall budget for administrative costs	5.9%	7.6% or less	5.5%	●
	4.5	Percentage of the total program budget paid to minority- and women-owned businesses	10.5%	10.2% or greater	12.3%	●
	4.6	Average customer wait time at DMV facilities that track transactions	24 min.	17 min. or less	25 min.	●
	4.7	Average statewide environmental compliance score on construction and maintenance projects	8.6	7.5 or greater	8.7	●

https://apps.dot.state.nc.us/dot/dashboard/default.aspx

Continuous Program Improvement Cycle

Data-driven decision making within a performance management framework is something that has become increasingly important in today's transportation environment

Cultivating a Safer Environment

The two keys to achieving the desired future state of transportation safety planning lay within the establishment and acceptance of performance management frameworks across state DOTs and MPOs, and the identification and collection of robust data sets that are used as inputs to the various safety planning tools

Actions Necessary for Improvement

By emphasizing a performance management framework as a method to guide decision making, state DOTs and MPOs can measure and refine their actions en route to accomplishing their strategic goals and objectives rather than waiting until after programs have already ran their course

Questions and Group Discussion

Discussion Prompts:

- What safety planning tools, practices, and training work well for you?

- How have you overcome challenges related to either the application of available tools or established safety planning processes?

- How are best practices shared with your peers?