Model State Action Plan Resource Guide
For Highway-Rail Grade Crossing Safety

WHAT IS THE PURPOSE OF THIS DOCUMENT?

On January 28, 2013, the National Transportation Safety Board (NTSB) issued multiple recommendations to the Federal Highway Administration (FHWA) and the Federal Railroad Administration (FRA), after investigating a June 24, 2011 highway-rail grade crossing collision in Miriam, Nevada involving a truck-tractor and an Amtrak passenger train. In two of those recommendations, the NTSB advised FHWA and FRA to work together to develop a model State grade crossing action plan that can be used as a resource document by all States. FHWA and FRA are therefore developing a model State Action Plan (SAP) that States can choose to use in their continuing efforts to address grade crossing safety. However, in the interim, FHWA and FRA are providing this resource guide for States who may wish to update existing SAPs to address grade crossing safety, and States who may be interested in developing a SAP in the future to address grade crossing safety.

WHY AN ACTION PLAN FOR STATES?

An action plan is an important part of the grade crossing program management process. It is the mechanism to implement an organizational strategy. While the strategic plan is vital to creating the framework for a State to meet its goals and support its mission statement, it is the action plan that provides the means by which a State may accomplish this.

It is important to note that, like a strategic plan, a SAP can be adjusted based on, but not limited to, context-sensitive data, incident trends, and regulatory and legislative requirements on highway-rail grade crossings. The dynamic nature of an SAP should not dissuade States from establishing and implementing an SAP to address highway-rail grade crossing safety.

STEPS TO DEVELOP AN SAP

The steps below provide a general blueprint to any State wishing to develop an SAP. To develop a cost-effective and efficient SAP, the process must include individuals currently involved with planning, implementing, and reviewing State programs to: (1) establish expectations and clearly defined roles and responsibilities; (2) ensure adequate communication; and (3) create measures of success. This process should be adjusted based on the State's policies, guidance, and best practices on process planning. States are encouraged to include all stakeholders in the railroad and highway safety community (e.g., railroads, Operation Lifesaver, Inc. (OLI), metropolitan planning organizations, Federal/State/local agencies, law enforcement, emergency responders, community organizations, etc.) to adopt a holistic approach to develop the SAP.

- Pre-Planning
    - Develop the appropriate SAP Team (see discussion above)
    - Review current strategic SAP (or surrogate plan, if there is no current SAP)

    - Generate and review crossing and accident reporting data relevant to the SAP for risk analysis and data-driven and/or engineering assessment of highest-risk crossings
    - Review previous SAPs (including SAPs from other States) and/or surrogate plans to evaluate success and determine next steps (e.g., continue, modify, increase/decrease emphasis, etc.)
    - Identify goal(s) and objectives(s) – which may be subject to change
    - Identify a plan scope – which may be subject to change
    - Brainstorm new SAP ideas with management, staff, and/or stakeholders, etc.

- Planning
    - Establish goal(s) and objective(s)
    - Define and establish a plan scope
    - Generate additional data metrics needed to develop or implement the plan
    - Inventory resources for SAP update (funding, staffing, programmatic support, etc.)
    - Review past efforts
    - Assess future programmatic needs
    - Decide on next steps, options, and contingencies
    - Determine implementation strategy, including priorities
    - Review/Modify plan
    - Prioritize/Schedule actions

- Post-Planning
    - Regular review/modification
    - Evaluate/Measure success
    - Communication (within and among Federal, State, regional, local and stakeholder agencies/organizations)
    - Prepare for next iteration of the SAP

- Implementation
    - Manage action items as planned
    - Implement contingency plans as needed
    - Review action item product to determine effectiveness and success in meeting the SAP's goal(s)

- Action Review (for next iteration)
    - Modify SAP as needed due to potential changes in the strategic plan, program mission statement, legislative/regulatory requirements, funding, data, technology (technological advancement), etc.
    - Disseminate modified SAP to SAP Team for review and comment – adjust SAP as needed

MODEL OUTLINE: HIGHWAY-RAIL GRADE CROSSING SAFETY PROGRAM SAP

- Introduction
- Mission statement
- Scope
- Goals and objectives
- Discussion of previous and existing highway-rail grade crossing safety programs (including primary focus areas and funding sources).
- Discussion of previous and existing trespass prevention programs. It is important to note that although many States do not have a trespass prevention program, which can be separate and distinct from their highway-rail grade crossing safety program, **trespassing can occur at highway-rail grade crossings**.
- Data analysis to show strengths, vulnerabilities, and challenges in highway-rail grade safety crossing programs
- Identify/Prioritize key areas of need
- Propose actions to mitigate vulnerabilities and challenges (including timeline)
- Identify challenges to meeting goals and propose alternate steps/strategy to meet goals (as necessary)
- Determine next steps (from a programmatic perspective)

RECOMMENDED PROGRAMS/PROJECTS TO INCLUDE IN THE SAP

The list below provides some programs and projects that support a highway-rail grade crossing safety initiative and should be considered in the SAP. It is important to note that this is not an exhaustive list of all programs and projects that States should consider in the plan. The SAP should provide States flexibility to make adjustments to include programs and projects that will directly increase safety by reducing the number of collisions, deaths, and injuries in an efficient and effective manner.

- Highway-Rail Grade Crossing Roadway Approach Improvements:
    - Channelization
    - New/Upgraded traffic signals, pre-signals, or queue cutters
    - Guardrail as needed to shield roadside device supports, etc.
    - Pedestrian improvements
    - Pathway improvements
    - Illumination
- Signage and Pavement Marking Improvements
    - Signage for the benefit of the motoring public and pedestrians
    - Pavement striping and markings
    - Raised pavement markers
- Active Highway-Rail Grade Crossing Warning Devices
    - Installation/Upgrade of flashing lights
    - Installation of gates
    - Upgrade of track circuitry

    - Installation/Upgrade of nearby highway traffic signal interconnection and pre-emption
    - Installation/Upgrade of standby power for any interconnected highway traffic signal system
    - Installation/Upgrade of active warning system event recorders
- Highway User Visibility Requirements
    - Sight distance assessments
    - Sight distance improvements
    - Vegetation clearance
- Roadway Geometry Improvements
    - Horizontal and vertical alignments
    - "Humped" (high profile) crossing elimination or mitigation
- Grade Crossing Elimination
    - Closure
    - Relocation
    - Consolidation
    - Grade separation construction/reconstruction
- Data Acquisition and Assessment
    - Crossing Inventory – NOTE: Railroads reporting and updating highway-rail grade crossing data is now required by law. See 49 CFR Part 234, Subpart F
    - Analysis to identify significant safety issues (e.g., multiple incidents at a crossing, high risk crossings, etc.)
    - Risk assessment and crossing prioritization toolbox
    - High-speed rail corridor analysis
- Innovative Technologies
    - Research and development (R&D) on next-generation technologies
    - Experimentation of new traffic control devices (see Section 1A.10 of the *Manual on Uniform Traffic Control Devices*)
    - Other State-supported efforts (e.g., State DOT R&D facilities, colleges/universities, stakeholders, corporate contracts, etc.)
- Education and Awareness Efforts
    - OLI
    - Department of Motor Vehicles – driver license manual and testing
    - K-12 and post-secondary students and educators
    - Other organizations (law enforcement/judiciary, motor carrier/commercial drivers, industrial, agricultural, recreational groups, etc.)
    - Other State-supported efforts
- Communication Efforts
    - First responders
    - Social, public broadcast/cable and print media
    - Other efforts
- Other Efforts Specific to the State
    - Compliance with the Americans with Disabilities Act

- Coordinating with groups and/or facilities (e.g., Native American Tribes/Nations, military installations, etc.).
- Other efforts

States should consider collaborating and/or sharing with other States, Tribes/Nations and military installations to develop effective, inclusive SAPs. This can be especially helpful where a city and/or metropolitan area span more than one State.

SAP RESOURCES

The following documents are available to assist States with developing an SAP:

- Title 49, Code of Federal Regulations, Part 234
- Title 23, United States Code, Sections 120(e), 130 and 148
- Title 23, Code of Federal Regulations, Parts 140 (Subpart I), 633, 636 and 924.
- Federal-aid Highway Program Policy & Guidance Center (http://www.fhwa.dot.gov/pgc/)
- *Manual on Uniform Traffic Control Devices* (http://mutcd.fhwa.dot.gov)
- *Railway-Highway Grade Crossing Handbook* – (https://www.fra.dot.gov/Elib/Details/L02829 or http://safety.fhwa.dot.gov/xings/com_roaduser/07010/)
- Federal Railroad Administration Web Site (http://www.fra.dot.gov)
- Federal Railroad Administration Regional Offices
- Federal Highway Administration Web Site (http://www.fhwa.dot.gov)
- Federal Highway Administration Federal-Aid Offices