

CHAPTER 8

IMPLEMENTATION, MONITORING & FUNDING OPPORTUNITIES



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IMPLEMENTATION & MONITORING

The Waco MPO CSAP provides a comprehensive framework for improving transportation safety and reducing KSI collisions throughout McLennan County. This chapter outlines the key steps needed to effectively implement the strategies and countermeasures identified in the plan, as well as the process for monitoring progress and evaluating the success of the implemented measures.

Successful implementation and continual evaluation are essential to achieving the goals and objectives set forth in the CSAP. Without a structured approach to putting the plan into action and assessing its impact, the identified strategies and countermeasures may not be fully realized or may fail to produce the desired safety improvements.

This chapter serves as a guide for the Waco MPO and its partner agencies to follow in the years after the initial adoption of the CSAP. It provides recommendations for:

- Integrating the safety plan’s recommendations into ongoing planning and project development processes
- Securing necessary funding and resources for implementation
- Establishing performance measures and monitoring protocols
- Conducting periodic evaluations to gauge the effectiveness of implemented countermeasures
- Updating the plan at regular intervals to address emerging safety issues and trends

By adhering to the implementation and evaluation processes outlined in this chapter, Waco MPO and their transportation agency partners can ensure that the CSAP remains a living document that adapts to changing conditions and continues to drive meaningful improvements in transportation safety for all road users.

IMPLEMENTATION

Successful implementation of the Waco MPO CSAP requires close coordination with identified safety partners such as local municipalities, TxDOT, law enforcement, emergency responders, community groups, and relevant state/regional agencies. It is recommended to extend the current Waco MPO Safety Action Task Force to meet regularly, coordinate activities, review progress, and address challenges.

The safety strategies and countermeasures should be systematically integrated into the MPO’s and local agencies transportation planning processes, capital improvement programming, and project development efforts. This includes

prioritizing safety projects for funding, incorporating countermeasures into all new projects during design, and coordinating with TxDOT and local cities to implement improvements on their respective road networks. Funding is a critical component of implementing any safety project. Securing adequate funding through pursuit of federal, state, and local sources, as well as other opportunities like grants or public-private partnerships is critical. The following

table lists potential funding sources for recommended safety projects.

LIST OF POTENTIAL FUNDING SOURCES

FUNDING SOURCE	FUNDING AGENCY	AMOUNT AVAILABLE	NEXT OR MOST RECENT CALL FOR PROJECTS	APPLICABLE'S	NOTES
Highway Safety Improvement Program	TxDOT/FHWA	Varies	2024	Engineering	Most common grant source for safety projects
RAISE Grant	USDOT	\$25 million	2024	Engineering	Typically used for larger infrastructure projects
State and Community Highway Safety Grant Program (Section 402)	TxDOT	Varies	Annual	Engineering, Enforcement, Education	Funds can be used for various road safety initiatives, such as enforcement, education, and engineering projects
Transportation Alternatives Set-Aside	TxDOT	\$250 million	2023	Engineering	Funds projects for alternative transportation to improve mobility and safety for people who don't use motor vehicles
Safe Streets and Roads for All (SS4A)	USDOT	\$200K - \$50 million	2024	Engineering, Enforcement, Education	Two types of SS4A grants available: Action Plan Grants and Implementation Grants
Safe Routes to School	TxDOT	Up to \$300K	2024	Engineering	Funds projects that improve walking/biking access and safety near schools
Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Program	USDOT	Minimum Award: \$100K	2024	Engineering	Funding to ensure surface transportation resilience to natural hazards including climate change, sea level rise, flooding, extreme weather events, and other natural disasters

MONITORING & EVALUATION

Continuous monitoring and periodic evaluation are critical to ensure the CSAP achieves its intended goals. A set of quantifiable performance measures should be established, such as number of KSI collisions, citations, observational data, and public feedback. Consistent data collection protocols must be implemented countywide to accurately track these measures, involving compilation of collision data, roadway data from TxDOT, observational studies, citation data from law enforcement, and public feedback tools.

It is recommended that the Waco MPO designate a lead agency or working group (e.g. Safety Action Task Force) to oversee data compilation from all pertinent sources on a recurring schedule. Developing a regularly updated collision dashboard and GIS-based monitoring platform could enable the MPO and supporting agencies, to collaboratively track implementation progress over time. To validate effectiveness of higher-cost, area-specific countermeasures, detailed before/after studies should evaluate baseline conditions prior to implementation and compare changes in collision patterns, speeds, conflicts, etc. after a sufficient time period.

The compiled data and performance measure evaluations should undergo an annual review process with key stakeholders and partners. This will identify areas not meeting goals, allow for adjustments or new strategies, reveal emerging issues, and inform updates made to CSAP every two to five years. Continual monitoring, evaluation, and updating based on observed performance is essential for driving sustained safety improvements over time.

PLAN UPDATE

The Waco MPO CSAP should be treated as a living document, recommended to be updated every two-to-five years after adoption. The update process should involve reviewing the latest collision data, transportation network changes, and newly available data sources to identify any shifting needs. A thorough evaluation of implemented strategy effectiveness, using the monitoring process, is recommended. Stakeholder engagement through the Safety Action Task Force and public outreach is critical to solicit feedback and identify areas for modification. Based on these review findings, the goals, strategies, countermeasures, implementation plan, and performance measures may require updates to address persisting or emerging safety issues more effectively. Regular updates ensure the plan's continued relevance.

MEASURING EFFECTIVENESS OF SAFETY PROJECTS

Implementing effective countermeasures and validating their success is crucial for achieving the goals of the Waco MPO CSAP. This section outlines the key activities and protocols for monitoring and evaluating the performance of individual safety projects.

Pre-Implementation Data Collection

Before any safety project is implemented, comprehensive baseline data should be collected within the project area to enable future before/after comparison analysis. Data to be compiled includes:

Collision Data:

- Collision types (pedestrian, angle, rear end, etc.)
- Collision severity levels
- Locations and corridors
- Contributing factors

Traffic Data:

- Vehicle traffic volumes
- Pedestrian and bicycle traffic counts

Operations Data:

- 85th percentile and pace speeds
- Vehicle/pedestrian/bicycle conflict observations
- Observable road user behavior and compliance levels

Statistical Analysis Methodology

Appropriate statistical techniques can be applied to account for regression-to-mean effects, traffic volume changes over time, and other potential biases. Recommended approaches include Empirical Bayes method and advanced regression modeling.

Using these techniques, an estimate of the predicted long-term safety performance should be calculated assuming no safety improvements were implemented. This becomes the baseline for comparison.

Post-Implementation Data Collection

After allowing sufficient time following project implementation (typically one-to-three years), the same scope of "after" data can be re-collected to enable before/after comparison.

Performance Evaluation Measures

The following key safety performance measures can be evaluated by

comparing predicted vs. actual post-implementation conditions:

- Total collisions
- KSI Collisions
- Collisions by type (pedestrian, intersection, roadway departure, etc.)
- Operating speeds
- Conflicts between modes (vehicle/pedestrian/bicycle)

Supplemental Measures for Behavioral Safety Projects

For safety initiatives focused on influencing driver, pedestrian, or bicyclist behavior (e.g. education campaigns, enforcement activities), leading indicators of compliance can be tracked, such as:

- Speeding violations
- Impaired driving arrests/citations
- Distracted driving violations
- Pedestrian and bicycle traffic counts
- Observed yielding/compliance behavior

Project Evaluation Report

All findings from the before/after analysis should be documented in a comprehensive Project Evaluation Report containing:

- Project scope and description of implemented countermeasures
- Implementation costs
- Data collection processes and sources
- Statistical analysis methodology
- Summary of before/after performance results
- Assessment of whether intended benefits were achieved
- Lessons learned and recommendations
- Supplemental policy, program or design guidance as applicable

Continual Monitoring Process

To ensure ongoing effectiveness evaluation, the Waco MPO should establish:

- Routine schedules for MOE (Measure of Effectiveness) data collection and analysis
- Designated staff responsibilities for MOE activities
- Integration of MOE findings into annual performance reviews
- Mechanism for refining project approach based on evaluation results



4305 HACIENDA DR, SUITE # 550, PLEASANTON, CA 94588 | P +1 925-463-0611 | WWW.TJKM.COM