

Destination Safe Streets – Implementation Framework

Prepared By: Lochmueller Group

For: Ozarks Transportation Organization (OTO)

September 2024

TABLE OF CONTENTS

Introduction	1
Safety Toolkit	2
Projects and Strategies	2
Policy/Process Evaluation	2
Systemic Project Evaluation	2
Site-Specific Evaluation	2
Initial Project List.....	2
Prioritization Process	3
Implementation Matrix.....	3
SS4A Comprehensive List of Projects and Strategies.....	5

LIST OF APPENDICES

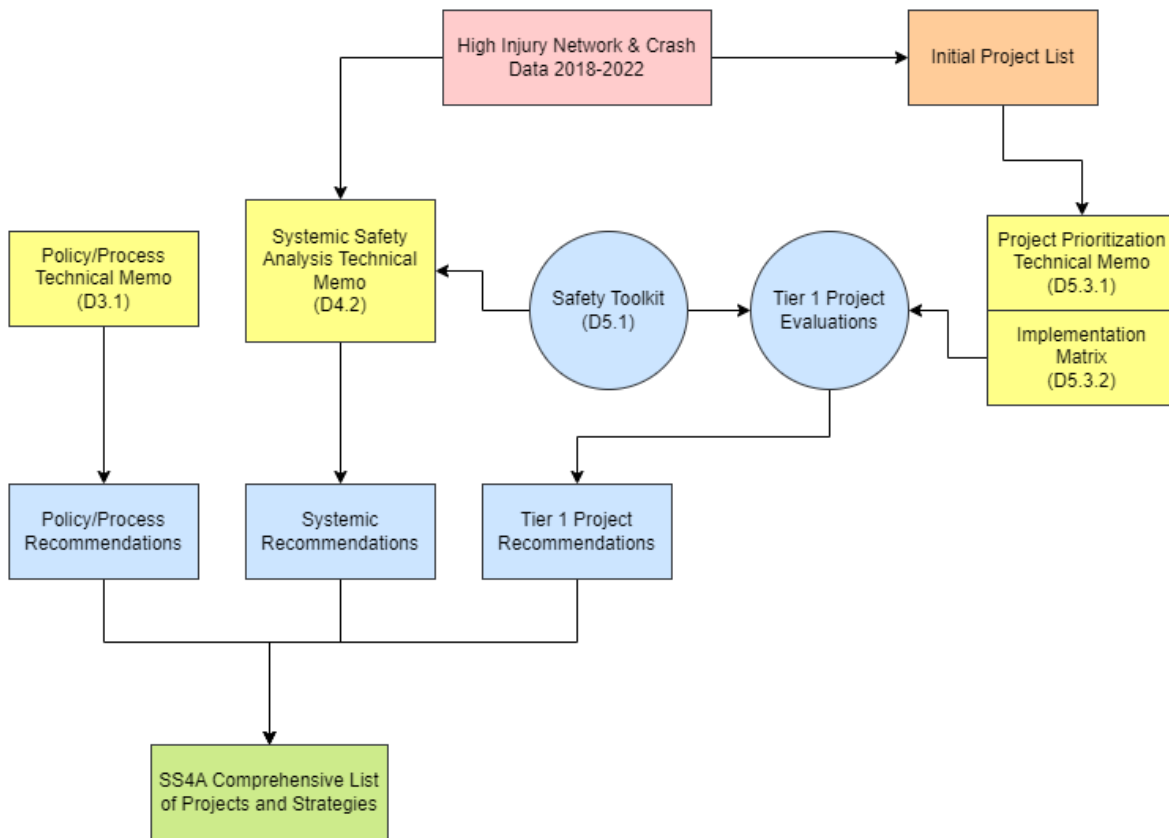
Appendix A – Safety Toolkit
Appendix B – Policy/Process Technical Memo
Appendix C – Systemic Safety Analysis Technical Memo
Appendix D – Project Prioritization Technical Memo
Appendix E – Implementation Matrix
Appendix F – Tier 1 Project Recommendations Technical Memo

INTRODUCTION

The Ozarks Transportation Organization (OTO) Safety Action Plan, “Destination Safe Streets”, is a commitment to reducing fatal and serious injury crashes and improving roadway safety for all users. The Destination Safe Streets Implementation Plan is a collection of projects and strategies, based in the Safe System Approach and developed through a data-driven approach. This implementation framework organizes and describes the various elements of the Implementation Plan including:

- Safety Toolkit
- Projects and Strategies
 - Policy/Process Evaluation
 - Systemic Projects
 - Site-Specific Projects
- Safe Streets and Roads for All (SS4A) Comprehensive List of Projects and Strategies

The Implementation Plan is one component of the Destination Safe Streets Safety Action Plan. Together with other components such as engagement and collaboration, equity considerations, safety analysis, and Advisory Committee guidance, Destination Safe Streets will be a comprehensive, strategic, and actionable plan that prioritizes roadway safety for all users.



SAFETY TOOLKIT

Implementing evidence-based countermeasures can significantly improve the safety and inclusivity of transportation networks, fostering a more secure environment for everyone in the community. The Safety Toolkit (Appendix A) provides a list of proven safety countermeasures that can be implemented throughout the region to improve safety for all roadway users. For each safety countermeasure, general guidance is provided and includes the purpose and a description of the countermeasure, applicable locations, expected safety benefits, and additional design considerations. Guidance for each safety countermeasure also includes targeted users (vehicles, bicycles, pedestrians, wheelchair users) and a planning level cost estimate. Safety countermeasures that are appropriate for systemic applications are noted. Finally, links to related research and national best practices are provided where appropriate.

PROJECTS AND STRATEGIES

The Destination Safe Streets projects and strategies were developed in three categories: policy/process recommendations, systemic projects, and site-specific projects. Together, these recommendations constitute the SS4A Comprehensive List of Projects and Strategies as defined and required by the SS4A grant program.

Policy/Process Evaluation

New and/or updated policies, procedures, and programs are important strategies to improve safety outcomes for all users throughout the region. Following an assessment of existing policies and procedures, policy and program recommendations are tailored to specific needs within OTO while also considering national best practices. Each recommended strategy is a starting point from which municipalities can begin working, along with their partners, to adjust and implement policies. The evaluation process is documented in the Policy/Process Technical Memo (Appendix B).

Systemic Project Evaluation

The purpose of the systemic safety analysis is to evaluate the risk of roadway characteristics, identify locations with the greatest risk of fatal and serious injuries, and to develop systemic safety countermeasures to improve safety outcomes throughout the network. The systemic safety analysis includes the development of risk factors based on fatal and serious injury crashes at high injury analysis locations, the identification of high-risk roadway features, and a regional risk assessment and risk index score for all roadways. To mitigate the effects of high-risk features along roadways throughout the OTO region, a systemic application of safety countermeasures is listed to mitigate risk and address the most frequently occurring fatal and serious injury crash types. The evaluation process is documented in the Systemic Safety Analysis Technical Memo (Appendix C).

Site-Specific Evaluation

Initial Project List

The site-specific evaluation begins with the initial project list of over 200 project locations. The initial project list was developed from the following sources:

- Unfunded STIP safety priority locations
- High Injury Network (HIN) locations
- Locations identified by OTO member agencies
- Locations identified by the public via the survey and public meetings

Prioritization Process

The prioritization process is outlined in the Project Prioritization Technical Memo (Appendix D). The project prioritization process assigns all 202 project locations with data elements and prioritization criteria. Prioritization criteria were developed with guidance from the Advisory Committee and OTO. Each prioritization criterion was assigned a point value to reflect the relative importance of the criterion. For each project location, a priority score was calculated to serve as the quantitative element of the prioritization process with higher priority scores representing projects with higher quantitative priority.

Table 1 - Project Prioritization Criteria

<u>Prioritization Criteria</u>	<u>Ranking</u>	<u>Measurement</u>	<u>Point Value Assigned</u>
Number KSI Crashes	#1	If greater than the mean (≥ 5)	6 pts
High Injury Network (HIN)	#2	If yes	5 pts
Number Fatal Injuries	#3	If greater than the mean (≥ 1)	4 pts
Number Serious Injuries	#4	If greater than the mean (≥ 5)	3 pts
STIP Priority	#5	If yes	2 pts
Public Input	#6	If yes	1 pt

In addition to the quantitative evaluation, a qualitative component was also incorporated into the prioritization process. OTO and the Advisory Committee intended to identify a set of priority project locations that represent diversity by reviewing the following qualitative elements for each project location:

- Disadvantaged communities
- Urban and rural locations
- Roadway segments and intersections
- Pedestrian and bicycle improvements
- OTO member agencies

The result of the prioritization process is the Implementation Matrix, encompassing all tiered projects.

Implementation Matrix

The Implementation Matrix (Appendix E) is the prioritized and tiered project list. All 202 project locations are placed into one of three tiers based on the results of the prioritization process and guidance from the Advisory Committee.

Table 2 - Implementation Matrix Data Elements

Element	Description
Project Location	Description of project location
Location Type	Segment, intersection, or bicycle/pedestrian
System (State/Local)	Roadway owned/maintained by the State or Local agency
HIN	Located on the High Injury Network (yes/no)
CEJST Disadvantaged	Located within a disadvantaged community (yes/no)
Municipality (Geographic)	Municipality project is located
Urban Rural	Located in Urban or Rural area
STIP Priority	Identified from the STIP priority list (yes/no)
Timeframe	Timeframe to develop and implement improvements (short/mid/long)
Public Input	Identified from public input (yes/no)
Local Agency Input	Identified by OTO member agency (yes/no)
Number of KSI Crashes	Number of KSI crashes at location (2018-2022)
Number of Fatal Injuries	Number of fatal injuries at location (2018-2022)
Number of Serious Injuries	Number of serious injuries at location (2018-2022)
KSI	Number of KSI crashes prioritization criteria point value (6/0)
HIN	HIN prioritization criteria point value (5/0)
Fatal Injuries	Number of fatal injuries prioritization criteria point value (4/0)
Serious Injuries	Number of serious injuries prioritization criteria point value (3/0)
STIP Priority	STIP prioritization criteria point value (2/0)
Public Input	Public input prioritization criteria point value (1/0)
Priority Score	Total priority score (0-21)
Tier	Priority tier (0/1/2)

Tier 0 Projects

Tier 0 projects are locations that earn a high priority score and have already been studied for future safety improvements. All of these projects are on the State system under Missouri Department of Transportation (MoDOT) jurisdiction. Because these locations have been identified and studied by MoDOT for improvements, they are not considered high priority for action by OTO or its member agencies. There are 10 Tier 0 project locations.

Tier 1 Projects

Tier 1 projects are locations with the highest safety priority in the OTO region. Tier 1 projects were identified through the prioritization process and collectively represent the OTO member agencies, disadvantaged communities, and a mix of urban and rural locations, state and local routes, segments and intersections, and pedestrian/bicycle improvement needs. Tier 1 projects were further evaluated to assess existing roadway characteristics and crash history to developed location specific safety countermeasures. The 21 Tier 1 projects and associated recommendations are documented in the Tier 1 Project Recommendations Technical Memo (Appendix F).

Tier 2 Projects

Tier 2 projects are the remaining locations found in the Implementation Matrix and were evaluated through the prioritization process. While not determined to be high priority locations, Tier 2 projects merit inclusion in the Implementation Matrix and can be subject to future project development if

funding becomes available and/or local priorities change. There are 171 Tier 2 projects, categorized as secondary priorities.

SS4A COMPREHENSIVE LIST OF PROJECTS AND STRATEGIES

The SS4A Comprehensive List of Projects and Strategies are identified and detailed in previous sections of the Implementation Plan and are summarized below. The SS4A Comprehensive List of Projects and Strategies satisfies the requirements of the SS4A grant program¹ and represents the immediate priorities in the OTO region to address the safety problems throughout the region.

Site-Specific Projects (Tier 1 Locations)
MO-13/Kansas Expressway (Evergreen St to Division St)
MO-13/Kansas Expressway (Division St to Chestnut Ex)
MO-13 (Norton Rd to Route WW)
MO-13 and Division St Intersection
Route 14 (14th St to Route W)
Route 125 (Route D to US 60)
Kearney St and National Ave Intersection
US 160 and Farm Road 123 Intersection
US 160 (Route 14 to OTO Boundary)
Route AB (US 160 to Route EE)
Route CC (US 160 to US 65)
Route FF (Republic Rd to Weaver Rd)
Glenstone Ave (Valley Water Mill Rd to Evergreen St)
Grant Ave (College St to Kearney St)
Tracker Rd (Nicholas Rd to US 160)
National Ave (Chestnut Ex to Kearney St)
Grand St (Kansas Ex to Glenstone Ave)
Division St (Kansas Ex to Sherman Ave)
Sunshine St (Kansas Ex to Campbell Ave)
Hines St (Oakwood Ave to Route ZZ)
S Campbell Ave (Battlefield St to Republic Rd)

**Tier 0 and Tier 2 projects are found in the Implementation Matrix*

¹ SS4A Self-Certification Eligibility Worksheet, last updated February 20, 2024.

Systemic Projects (High-Risk Locations)
Grant Avenue
Battlefield Street
Chestnut Expressway
Division Street
Glenstone Avenue
Kearney Street
MO-14 (Nixa and Ozark)
National Avenue
Republic Street
S Campbell Avenue
Sunshine Street
US-61 (Republic)

Systemic Projects (High-Risk Roadway Features)		Risk Factor
Intersection Type	Signalized Intersection	6.1
Functional Class	Minor Arterial	1.8
	Principal Arterial	1.8
Shoulder Type	Aggregate	4.8
	Asphalt	1.2
	Curb and Gutter	1.4
	Earth	1.6
Shoulder Width	1ft	2.3
	2ft	1.5
	3ft	1.1
	4ft	1.5
Number of Lanes	3 lanes	2.1
	4 lanes	1.8
Median Access Control	Undivided	1.4
Horizontal Curvature	Class 4	1.5
Multimodal Activity	Yes, within ¼ mile of multimodal facility	1.2
Area Type	Urban	1.1
MoDOT Roadway Type	3 Lane Section	1.4
	5 Lane Section	1.5
	Expressway	1.1
	Two Lane	1.2

**More information on appropriate countermeasures are found in the Systemic Safety Analysis Technical Memo.*

Policy Recommendations

Develop or update ADA Transition Plans (when required by the public entity)

Adopt a Complete Streets policy

Develop guidance to utilize OTO's Social Equity Index data

Develop guidance to utilize OTO's crash and High Injury Network data

Establish Safe Routes to School programs in combination with developing a toolbox of traffic calming strategies for school zones

Partner with law enforcement agencies for targeted enforcement efforts

Utilize transportation educational campaign materials provided by USDOT