DESTINATION SAFE STREETS

OTO Safety Action Plan

Implementation Plan

Lochmueller Group

Safe Streets and Roads for All

Action Plan Components

Leadership Commitment and Goal Setting

An official public commitment (e.g., resolution, policy, ordinance, etc.) by a high-ranking official and/or governing body (e.g., Mayor, City Council, Tribal Council, MPO Policy Board, etc.) to an eventual goal of zero roadway fatalities and serious injuries. The commitment must include a goal and timeline for eliminating roadway fatalities and serious injuries achieved through one, or both, of the following:

(1) the target date for achieving zero roadway fatalities and serious injuries, OR

(2) an ambitious percentage reduction of roadway fatalities and serious injuries by a specific date with an eventual goal of eliminating roadway fatalities and serious injuries.

Planning Structure

A committee, task force, implementation group, or similar body charged with oversight of the Action Plan development, implementation, and monitoring.

Safety Analysis

Analysis of existing conditions and historical trends that provides a baseline level of crashes involving fatalities and serious injuries across a jurisdiction, locality, Tribe, or region. Includes an analysis of locations where there are crashes and the severity of the crashes, as well as contributing factors and crash types by relevant road users (motorists, people walking, transit users, etc.). Analysis of systemic and specific safety needs is also performed, as needed (e.g., high-risk road features, specific safety needs of relevant road users, public health approaches, analysis of the built environment, demographic, and structural issues, etc.). To the extent practical, the analysis should include all roadways within the jurisdiction, without regard for ownership. Based on the analysis performed, a geospatial identification of higher-risk locations is developed (a High-Injury Network or equivalent).

Engagement and Collaboration

Robust engagement with the public and relevant stakeholders, including the private sector and community groups, that allows for both community representation and feedback. Information received from engagement and collaboration is analyzed and incorporated into the Action Plan. Overlapping jurisdictions are included in the process. Plans and processes are coordinated and aligned with other governmental plans and planning processes to the extent practical.

Equity Considerations

Plan development using inclusive and representative processes. Underserved communities* are identified through data and other analyses in collaboration with appropriate partners. Analysis includes both population characteristics and initial equity impact assessments of the proposed projects and strategies.

Policy and Process Changes

Assessment of current policies, plans, guidelines, and/or standards (e.g., manuals) to identify opportunities to improve how processes prioritize transportation safety. The Action Plan discusses implementation through the adoption of revised or new policies, guidelines, and/or standards, as appropriate.

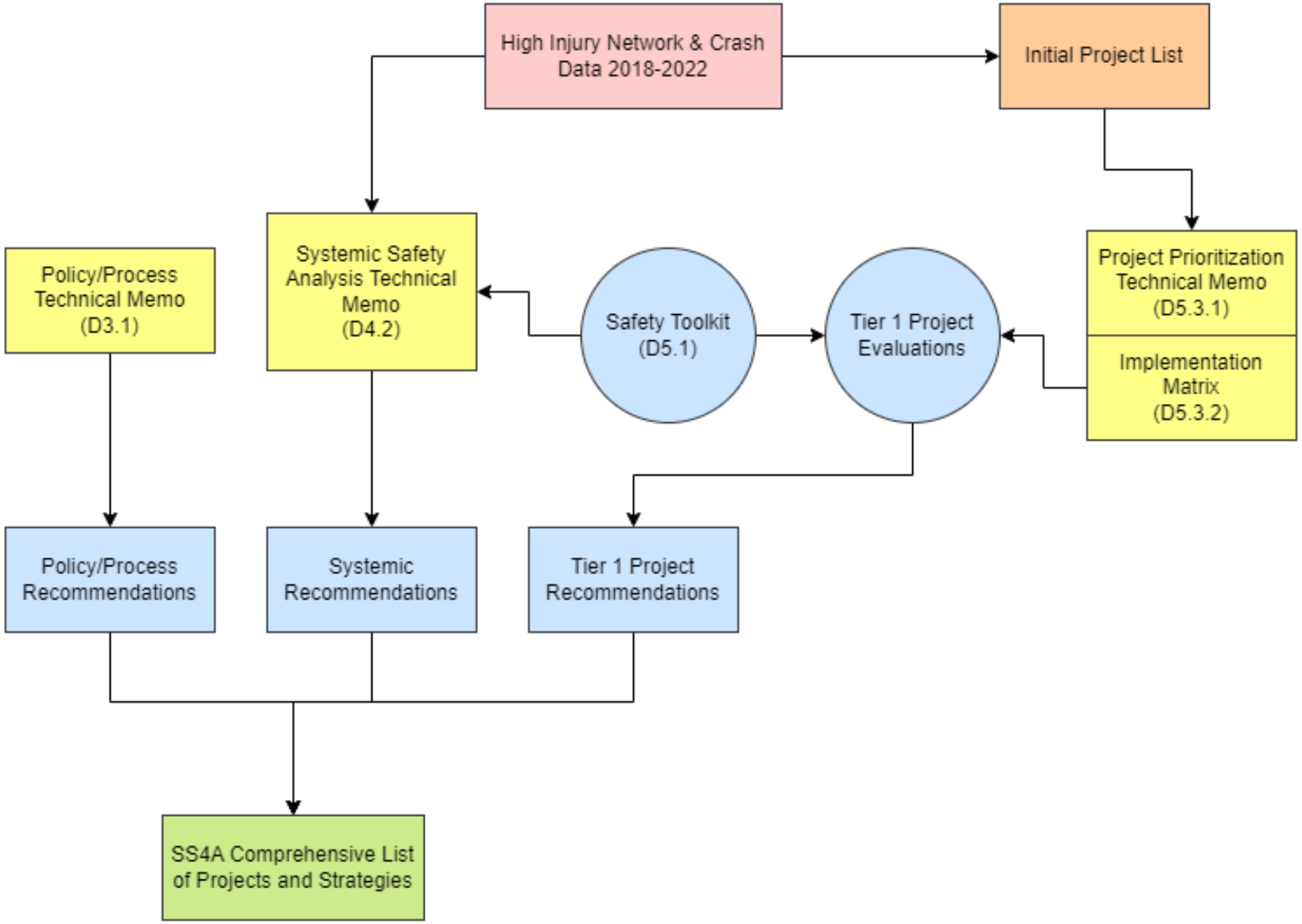
Strategy and Project Selections

Identification of a comprehensive set of projects and strategies, shaped by data, the best available evidence and noteworthy practices, as well as stakeholder input and equity considerations, that will address the safety problems described in the Action Plan. These strategies and countermeasures focus on a Safe System Approach, effective interventions, and consider multidisciplinary activities. To the extent practical, data limitations are identified and mitigated.

Once identified, the list of projects and strategies is prioritized in a list that provides time ranges for when the strategies and countermeasures will be deployed (e.g., short-, mid-, and long-term timeframes). The list should include specific projects and strategies, or descriptions of programs of projects and strategies, and explains prioritization criteria used. The list should contain interventions focused on infrastructure, behavioral, and/or operational safety.

Progress and Transparency

Method to measure progress over time after an Action Plan is developed or updated, including outcome data. Means to ensure ongoing transparency is established with residents and other relevant stakeholders. Must include, at a minimum, annual public and accessible reporting on progress toward reducing roadway fatalities and serious injuries, and public posting of the Action Plan online.



DESTINATION SAFE STREETS
OTO Safety Action Plan

Tier 1 Project Recommendations

DESTINATION SAFE STREETS
OTO Safety Action Plan

Tier 1 Projects

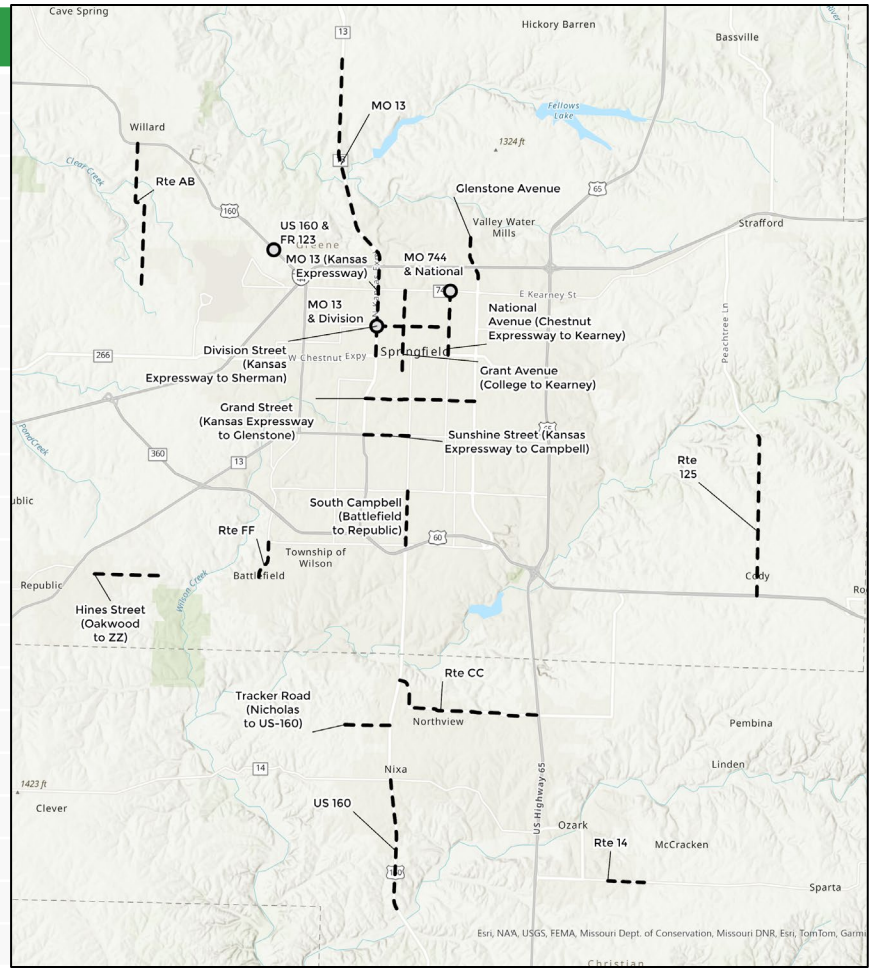
Project Prioritization

Prioritization Criteria	Ranking	Measurement	Point Value Assigned
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

DESTINATION SAFE STREETS
OTO Safety Action Plan

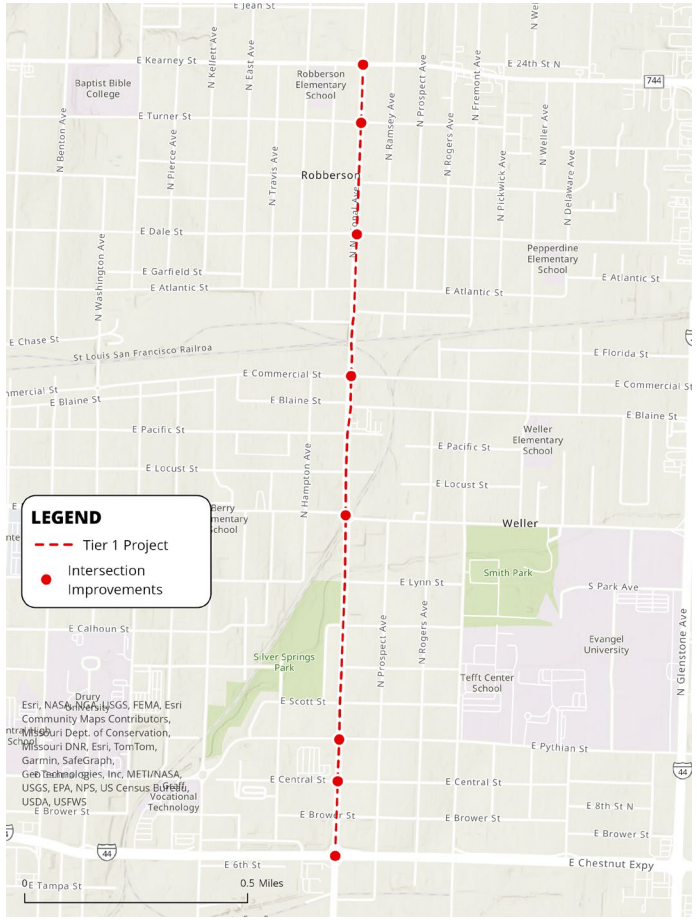
Tier 1 Projects

Tier 1 Project 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)



DESTINATION SAFE STREETS
OTO Safety Action Plan

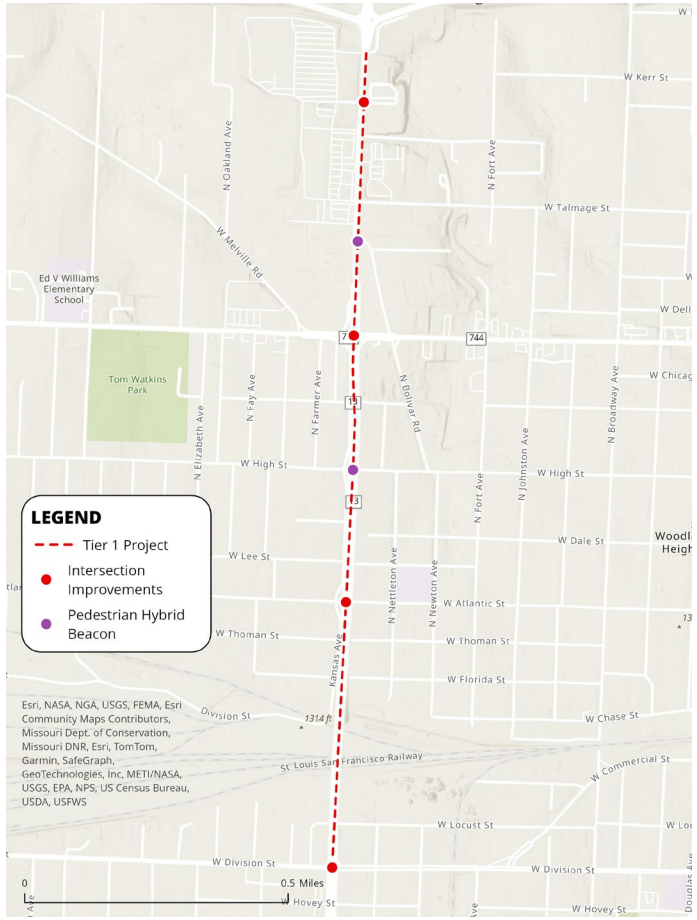
National Avenue



Countermeasure	Purpose	Planning Level Cost	Estimated Cost
Road Diet	Reduce fatal and serious injury crashes and vehicle speeds	$150,000 per mile	$270,000
Permissive to Protected Left Turn Phase	Reduce left turn and head on crashes	$5,000 per intersection	$40,000
Bicycle Lanes – On-Street	Reduce bicycle crashes	$120,000 per mile	$216,000
Bicycle Lanes – Elevated Cycle Track	Reduce bicycle crashes	$600,000 per mile	$1,080,000
Crosswalk Enhancements	Reduce pedestrian and out of control crashes	$25,000 per intersection	$200,000
Pedestrian Refuge Islands	Reduce pedestrian crashes Reduce vehicle speeds	$115,000 per island	$1,840,000
Leading Pedestrian Interval	Reduce pedestrian crashes	$5,000 per intersection	$40,000
BASELINE ESTIMATED TOTAL			$2,600,000 - $3,500,000

DESTINATION SAFE STREETS
OTO Safety Action Plan

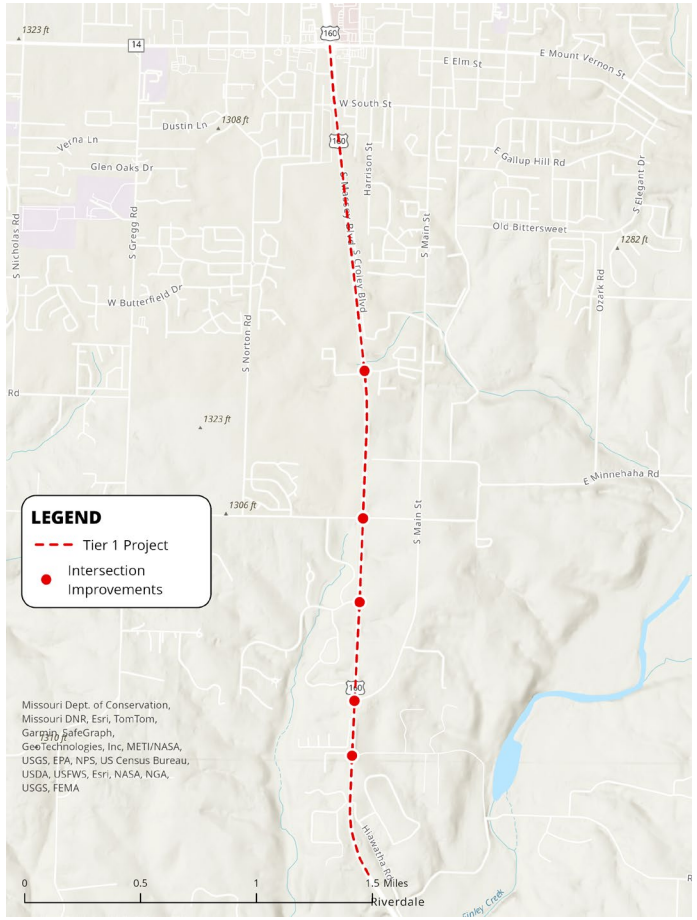
MO-13



Countermeasure	Purpose	Planning Level Cost	Estimated Cost
Sidewalks	Reduce pedestrian crashes	$370,000 per mile	$481,000
Pedestrian Hybrid Beacons (PHBs)	Reduce pedestrian crashes Reduce vehicle speeds	$120,000 each	$240,000
Crosswalk Enhancements	Reduce pedestrian crashes Reduce vehicle speeds	$25,000 per intersection	$100,000
Pedestrian Refuge Islands	Reduce pedestrian crashes Reduce vehicle speeds	$115,000 per island	$920,000
Dilemma Zone Detection	Reduce rear end and right-angle crashes	$60,000 per intersection	$240,000
Signal Heads with Retroreflective Backplates	Reduce rear end and right-angle crashes	$3,000 per signal	$168,000
Permissive to Protected Left Turn Phase	Reduce left turn and right-angle crashes	$5,000 per intersection	$20,000
Improved Right Turn Angles	Reduce pedestrian crashes Reduce vehicle speeds	$400,000 per right turn	$3,200,000
BASELINE ESTIMATED TOTAL			$5,400,000

DESTINATION SAFE STREETS
OTO Safety Action Plan

US-160



Countermeasure	Purpose	Planning Level Cost	Estimated Cost
Intersection Conflict Warning Systems	Reduce right angle and rear end crashes	$35,000 per intersection	$175,000
Lighting	Reduce crashes at intersections	$30,000	$150,000
Systemic Signing & Marking	Reduce rear end and intersection crashes	$15,000 per intersection	$75,000
Rumble Strips	Reduce out of control crashes	$10,000 per mile	$36,000
Reduced Conflict Left Turn Intersections	Reduce left turn and right angle crashes	$1,000,000 per intersection	$2,000,000
BASELINE ESTIMATED TOTAL			**$2,400,000**

DESTINATION SAFE STREETS
OTO Safety Action Plan

Systemic Recommendations

DESTINATION SAFE STREETS
OTO Safety Action Plan

Systemic Projects

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

High-Risk Feature: Intersection Type

High-Risk Feature	Top KSI Crash Types	Systemic Strategies
Signalized Intersection	Left Turn (34%) Left Turn Right Angle (12%) Out of Control (11%) Head On (11%) Pedestrian/Bicyclist (11%)	Retroreflective Backplates Roundabouts Yellow Change Intervals Leading Pedestrian Intervals Crosswalk Enhancements Pedestrian Refuge Islands Permissive to Protected Left Turn Improved Channelized Right Turn Angle Dilemma Zone Detection Left Turn Offset Improvement

DESTINATION SAFE STREETS
OTO Safety Action Plan

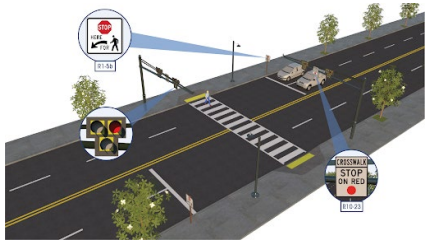
High-Risk Feature: Shoulder Width

High-Risk Feature	Top KSI Crash Types	Systemic Strategies
Shoulder Width 1ft – 4ft	Out of Control (26%) Left Turn (14%) Pedestrian/Bicyclist (13%) Right Angle (11%)	Enhanced Delineation Curve Improvements Rumble Strips High Friction Surface Treatment

DESTINATION SAFE STREETS
OTO Safety Action Plan

High-Risk Feature: Roadway Type

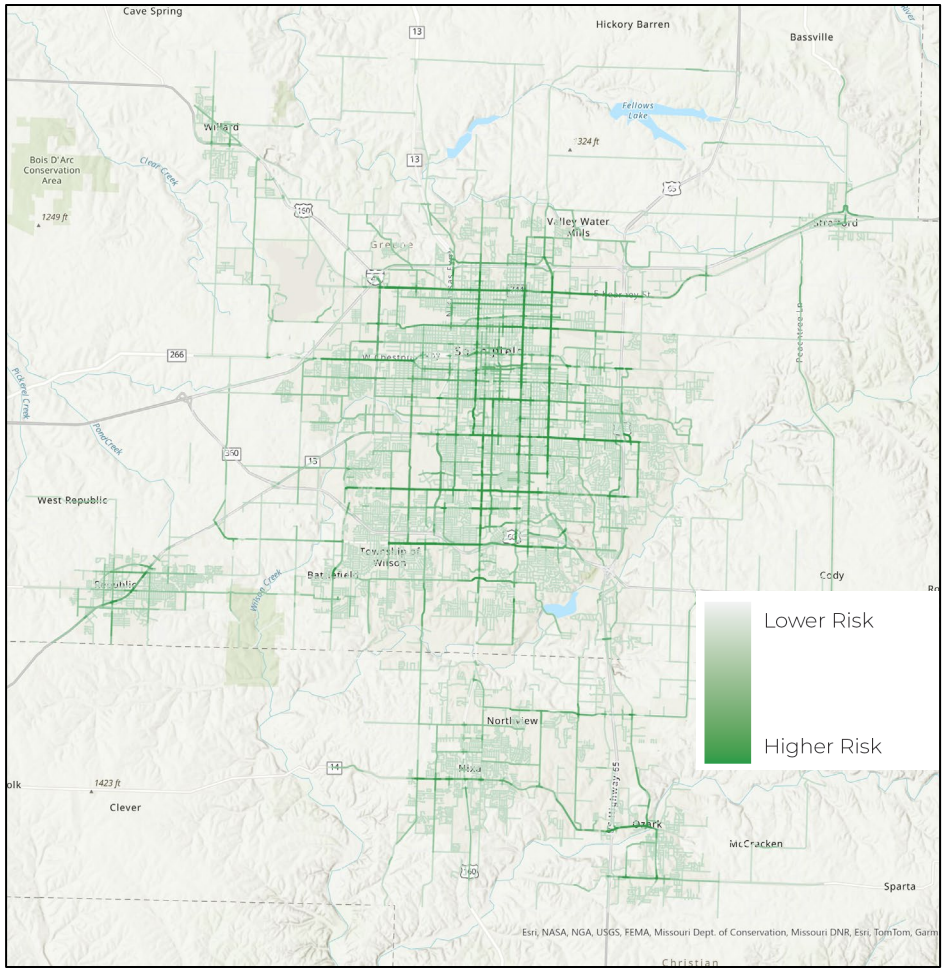
High-Risk Feature	Top KSI Crash Types	Systemic Strategies
Two-Lane	Out of Control (38%) Pedestrian/Bicyclist (11%) Right Angle (10%)	Enhanced Delineation Curve Improvements Rumble Strips High Friction Surface Treatment Intersection Conflict Warning Dynamic Speed Displays Guardrail, Clear Zone Pedestrian Hybrid Beacons (PHBs)
3-Lane Section	Out of Control (31%) Pedestrian/Bicyclist (17%) Right Angle (12%) Left Turn (12%)	Road Diets Corridor Access Management Dilemma Zone Detection Median Barriers Sidewalks Shared Use Paths Pedestrian Refuge Islands Permissive to Protected Left Turn Pedestrian Hybrid Beacons (PHBs)



DESTINATION SAFE STREETS
OTO Safety Action Plan

Systemic Projects

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



DESTINATION SAFE STREETS
OTO Safety Action Plan

Policy/Process Recommendations

DESTINATION SAFE STREETS
OTO Safety Action Plan

OTO Member Survey

TOPIC	DESCRIPTION A policy, plan, guideline, standard, or other formalized process that addresses:
ADA Transition Plan	Pedestrian infrastructure improvements with respect to Americans with Disabilities Act (ADA) compliance
Complete Streets	Roadway design for all users
Educational Campaigns	Educational efforts regarding unsafe driving behavior and/or awareness of vulnerable road users
Equity	Funding dedication specifically for roadway safety projects in underserved and disadvantaged areas
Funding	Funding dedication specifically for roadway safety; vulnerable road users, etc.
Land Development	Incorporation of roadway safety and/or multimodal access standards into development review process for new developments
Narrow Lanes	Roadway lane widths (could be part of Complete Streets policy)
Performance Management	The annual tracking of fatal and serious injury crashes and safety projects; annual public updates; an entity to review fatal/serious injury crashes
Project Selection	Improvement project prioritization based on proven safety countermeasures and/or safety for vulnerable road users
Roundabout Pedestrian Crossings	Pedestrian crossings at roundabouts
Safe Routes to School (SRTS)	Partnering with school districts to develop Safe Routes to School programs
School Zones	Traffic calming strategies and deployments in school zones
Speed Limits	Consistent speed limits are set on similar roadways throughout the region
Speed Management	A means for residents to formally request speed humps/bumps/cushions, signage, or other traffic calming features to reduce vehicle speeds
Traffic Operations	Levels of Service (LOS) along urban/high-pedestrian corridors

Member Responses

TOPIC	OTO Member Agency								
	County		City						
	Christian	Greene	Battlefield	Nixa	Ozark	Republic	Springfield	Strafford	Willard
ADA Transition Plan	*No*	*Yes*	*No*	*No*	*Yes*	*Yes*	*Yes*	*No*	*No*
Complete Streets	*No*	*No*	*Yes*	*No*	*No*	*No*	*Yes*	*No*	*No*
Educational Campaigns	*No*	*No*	*No*	*No*	*No*	*Partial*	*Partial*	*No*	*No*
Equity	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*
Funding	*No*	*Yes*	*No*	*Yes*	*Yes*	*Yes*	*Yes*	*No*	*No*
Land Development	*Yes*	*Yes*	*No*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Narrow Lanes	*Yes*	*Yes*	*No*	*No*	*No*	*Yes*	*No*	*No*	*No*
Performance Management	*No*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Project Selection	*No*	*Yes*	*No*	*Yes*	*No*	*Yes*	*No*	*No*	*No*
Roundabout Pedestrian Crossings	*No*	*Partial*	*No*	*No*	*No*	*No*	*No*	*No*	*No*
Safer Routes to School (SRTS)	*No*	*Yes*	*No*	*No*	*No*	*No*	*Partial*	*No*	*No*
School Zones	*Yes*	*No*	*No*	*No*	*No*	*No*	*Yes*	*No*	*No*
Speed Limits	*No*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Speed Management	*No*	*No*	*No*	*No*	*Partial*	*Yes*	*Yes*	*No*	*No*
Traffic Operations	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*

DESTINATION SAFE STREETS
OTO Safety Action Plan

Policy/Process Recommendations

Emphasis Area	Recommended Strategy	Responsibility
ADA Compliance	#1 – Develop or update ADA Transition Plans (when required by the public entity)	Members
Complete Streets	#2 – Adopt a Complete Streets policy	Members
Data-based Decision-making	#3 – Develop guidance to utilize OTO's Social Equity Index data	OTO
Data-based Decision-making	#4 – Develop guidance to utilize OTO's crash and High Injury Network data	OTO
Safe Routes to School	#5 – Establish Safe Routes to School programs in combination with developing a toolbox of traffic calming strategies for school zones	Members/OTO
Vehicular Speeds	#6 – Partner with law enforcement agencies to implement targeted enforcement efforts	Members
Public Educational Campaigns	#7 – Utilize transportation educational campaign materials provided by USDOT	Members/OTO

DESTINATION SAFE STREETS
OTO Safety Action Plan

Summary

- Comprehensive list of project and strategies
  - Tier 1 project locations
  - Systemic projects
  - Policy/process improvements

- Identified in the Action Plan
  - SS4A funding eligible
  - Other implementation opportunities

DESTINATION SAFE STREETS
OTO Safety Action Plan

Questions

LOCHMUELLER GROUP

DESTINATION SAFE STREETS
OTO Safety Action Plan