MAP-21

Highway Safety Improvement Plan and Safety Performance Measures

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MAP-21 Safety Goal:

"To achieve a significant reduction in fatalities and serious injuries on ALL public roads"

Primary Components

MIRE FDE

Model Inventory of Roadway Elements Fundamental Data Elements

An inventory of roadway features for systemic safety evaluation and improvement

Fatality and Serious Injury Statistics

Report on both the number of serious injuries and fatalities, as well as the rate of serious injuries and fatalities

Rate requires vehicle miles traveled for all public roads

Highway Safety Improvement Program (HSIP)

Requires establishment of safety targets by both State and MPO's

Model Inventory of Roadway Elements fundamental data elements

MIRE

Model Inventory of Roadway Elements

VERSION 1.0

202 total MIRE elements

II. Roadway Alignment Descriptors

II.a. Horizontal Curve Data

107. Curve Identifiers and Linkage Elements
108. Curve Feature Type
109. Horizontal Curve Degree or Radius
110. Horizontal Curve Length
111. Curve Superelevation
112. Horizontal Transition/Spiral Curve Presence
113. Horizontal Curve Intersection/Deflection Angle
114. Horizontal Curve Direction

II.b. Vertical Grade Data

115. Grade Identifiers and Linkage Elements
116. Vertical Alignment Feature Type
117. Percent of Gradient
118. Grade Length
119. Vertical Curve Length

37 MIRE elements required for AADT > 400

Roadway Segment	Intersection
Segment Identifier (12)	Unique Junction Identifier (120).
Route Number (8) *	Location Identifier for Road 1 Crossing Point (122).
Route/street Name (9) *	Location Identifier for Road 2 Crossing Point (123).
Federal Aid/Route Type (21) ±*	Intersection/Junction Geometry (126)
Rural/Urban Designation (20) ±*	Intersection/Junction Traffic Control (131).
Surface Type (23) *	AADT (79) [for Each Intersecting Road].
Begin Point Segment Descriptor (10) *	AADT Year (80) [for Each Intersecting Road].
End Point Segment Descriptor (11) *.	
Segment Length (13) *.	
Direction of Inventory (18)	Unique Approach Identifier (139).
Functional Class (19) *.	
Median Type (54).	
Access Control (22) *.	
One/Two-Way Operations (91) *	Interchange/Ramp
Number of Through Lanes (31) *	Unique Interchange Identifier (178).
Average Annual Daily Traffic (79) *	Location Identifier for Roadway at Beginning Ramp Terminal (197).

AADT Year (80) *	Location Identifier for Roadway at Ending Ramp Terminal (201).
Type of Governmental Ownership (4) *	Ramp Length (187).
	Roadway Type at Beginning Ramp Terminal (195).
	Roadway Type at Ending Ramp Terminal (199).
	Interchange Type (182).
	Ramp AADT (191) *.
	Year of Ramp AADT (192) *.
	Functional Class (19) *.
	Type of Governmental Ownership (4) *.

14 MIRE elements required for AADT < 400

Roadway Segment	Intersection
Segment Identifier (12)	Unique Junction Identifier (120).
Functional Class (19) *	Intersection/Junction Geometry (126).
Surface Type (23) *	Location Identifier for Road 1 Crossing Point (122).
Type of Governmental Ownership (4) *	Location Identifier for Road 2 Crossing Point (123).
Number of Through Lanes (31) *	Intersection/Junction Traffic Control (131).
Average Annual Daily Traffic (79) *.	
Begin Point Segment Descriptor (10) *.	
End Point Segment Descriptor (11) *.	
Rural/Urban Designation (20) *.	

By September 2020, have a complete collection of MIRE FDE on all public roads

MIRE – Consider the application of the information

MIRE Version 1.0 Element	Highway Performance Monitoring System (HPMS)	Highway Safety Manual (HSM)/ Interactive Highway Safety Design Model (IHSDM)	SafetyAnalyst
27. Pavement Roughness/Condition	Full Extent and Ramps*, Sample*		
28. Pavement Roughness Date	Full Extent and Ramps*, Sample *		
29. Pavement Condition (Present Serviceability Rating)	Sample		
30. Pavement Condition (PSR) Date	Sample		
I.c.2. Lane Descriptors			
31. Number of Through Lanes	Full Extent and Ramps	Required	Required
32. Outside Through Lane Width		Required	Optional
33. Inside Through Lane Width		Required	Optional
34. Cross Slope		Required	
35. Auxiliary Lane Presence/Type		Required	Required
36. Auxiliary Lane Length		Required	
37. HOV Lane Presence/Type	Full Extent		
38. HOV Lanes	Full Extent		
39. Reversible Lanes			
40. Presence/Type of Bicycle Facility			Optional

MIRE collection plan

How is everyone else approaching this challenge?

Should there be a statewide approach?

Fatalities and Serious injuries: Numbers and rates

SOURCES: FATALITY DATA FROM FARS, INJURY DATA FROM LAW ENFORCEMENT DATA, VEHICLE MILES TRAVELED FROM CALTRANS CENSUS AND HPMS EFFORTS.

Highway Safety Improvement Program

SET GOALS AND TARGETS AND A PLAN TO REACH THEM

COORDINATION BETWEEN STATE AND METROPOLITAN PLANNING ORGANIZATIONS FOR SETTING TARGETS

Breakout Groups

MIRE collection

- How to accomplish data collection
- Store data in central repository or separate systems?
- How to determine responsibilities and total list of participants
- Determine scale of MIRE collection
- Considerations of data maintenance and updates

Safety Performance

- Approach to target setting
- How to improve traffic data collection on local roads
- Coordination on reporting
- Implementing safety measures across the state

Breakout Group Reports on MIRE and Safety Performance Targets