MODEL INVENTORY OF ROADWAY ELEMENTS (MIRE)

HSIS LIAISON MEETING - OCTOBER 25, 2018
PRESENTED BY
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WHAT IS MIRE?

• TRAFFIC SAFETY DATA HAS THREE COMPONENTS – COLLISIONS, INVENTORY OF ROADWAY ELEMENTS, AND VOLUMES
• ALL THREE COMPONENTS OF SAFETY DATA ENABLE DATA DRIVEN SAFETY ANALYSIS THAT SUPPORTS THE “TOWARDS ZERO DEATHS” EFFORT
• MIRE IS A BEST PRACTICE FOR THE INVENTORY AND VOLUMES COMPONENTS OF TRAFFIC SAFETY DATA
FEDERAL HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

• In 2016 Federal rulemaking amended the HSIP
• Safety performance management was introduced for all public roads
• It included targets for fatal & serious injury collisions and a plan to achieve the targets (Strategic Highway Safety Plan for statewide and regional transportation plans for regions)
• It required a subset of MIRE to be in place by 2026
• The subset is titled ‘fundamental data elements’ (FDE)
BENEFITS OF MIRE

• SUPPORTS PERFORMANCE MEASURES
• ALLOWS ANALYSIS THAT CAN BE INCORPORATED INTO SAFETY PLANS
• ENABLES DATA DRIVEN DECISIONS TO BE MADE FOR SAFETY INVESTMENTS
• CAN BE USED STATEWIDE, REGIONALLY, AND LOCALLY
STANISLAUS COUNTY SYSTEMIC SAFETY ANALYSIS REPORT PROGRAM

GOAL: IMPLEMENT THE HSM PREDICTIVE METHOD COUNTY-WIDE

IMPLEMENT THE HSM

1. Collect Roadway Attributes - Extensive FDE for HSM
2. Locally calibrate the HSM Predictive Model
3. Correlate safety performance and roadway features
4. Generate a Prioritized Project List (Hot Spots/Systemic)
5. Identify systemic safety strategies to implement into Capital Projects and County Standards (performance based)
6. Screen Network on simplified datasets

Slide courtesy of Andrew Malizia, PE, Stanislaus County Public Works
DATA UTILIZATION

• WILL UTILIZE EXISTING DATA SOURCES WITH THE GOAL TO NOT IMPACT EXISTING USERS OR PROCESSES.
• HSM CONCENTRATES ON ROADWAY ELEMENT INFLUENCE/CORRELATION TO PERFORMANCE
• SAFETY PERFORMANCE FUNCTIONS CAN INCLUDE NOT JUST ROADWAY ELEMENTS, BUT BEHAVIORAL, SO LONG AS THE DATA IS AVAILABLE.
• SYSTEM RELIES HEAVILY ON CORRECT COLLISION LOCATION

Slide courtesy of Andrew Malizia, PE, Stanislaus County Public Works

NEW POTENTIAL USES

• POTENTIAL TO ROLL OUT AND STANDARDIZE LOCAL AGENCY DATA IF OTHER AGENCIES ARE WILLING TO USE IT.
  • THE MORE OPEN SOURCE, THE MORE INDUSTRY MAY TRY TO WORK WITH AGENCIES FOR IMPLEMENTATION AND DEVELOP FURTHER
• DEVELOPMENT ALONGSIDE CALTRANS OFFICE OF HIGHWAY SYSTEM INFORMATION AND PERFORMANCE (OHSIP) AND HPMS CONTACTS
  • MAY BE ABLE TO SUPPLEMENT CALTRANS EFFORTS WITH HPMS REPORTING OF LOCAL ROADS
• MIRE DATABASE WILL HELP LAY THE FOUNDATION FOR AN UPDATED ROADWAY ASSET MANAGEMENT PROGRAM.

Slide courtesy of Andrew Malizia, PE, Stanislaus County Public Works
STEPS TO ACHIEVE MIRE BY 2026

- DATA GOVERNANCE
- FEDERAL, STATE, AND LOCAL AGENCIES COORDINATION
- COLLECTION/INTEGRATION OF MIRE DATA
- STORAGE OF MIRE DATA
- MECHANISM TO REGULARLY UPDATE & MAINTAIN MIRE DATA

STORAGE AND MAINTENANCE OF DATA

- TSNR – TRANSPORTATION SYSTEM NETWORK REPLACEMENT

TSNR

- Roadway Inventory
- Crash Data
- Linear Reference System (LRS)
- Traffic Volume
MIRE PROGRESS

• MIRE FDE PRELIMINARY GAP ANALYSIS – MAY 2017
• TRCC MIRE FDE PROJECT MANAGEMENT PLAN – JUNE 2017
• CALTRANS MIRE FDE PROJECT CHARTER – MAY 2018
• TRCC EXECUTIVE MEETING MIRE PRESENTATION – JUNE 2018
• FHWA TECHNICAL ASSISTANCE – SAFETY DATA INTEGRATION PLAN – FALL 2018
• FHWA ROADWAY DATA IMPROVEMENT PLAN – FALL 2018
• TSNR DATA GOVERNANCE COMMITTEE – DRAFT CHARTER
• ANNUAL PAVEMENT CONDITION SURVEY 2020 COORDINATION – ONGOING
• COORDINATION WITH LOCAL PARTNERS – ONGOING