



U.S. Department of Transportation
Federal Highway Administration

Office of Safety Research and Development

FHWA Motorcycle Safety Program: Infrastructure Based Motorcycle Crash Countermeasures

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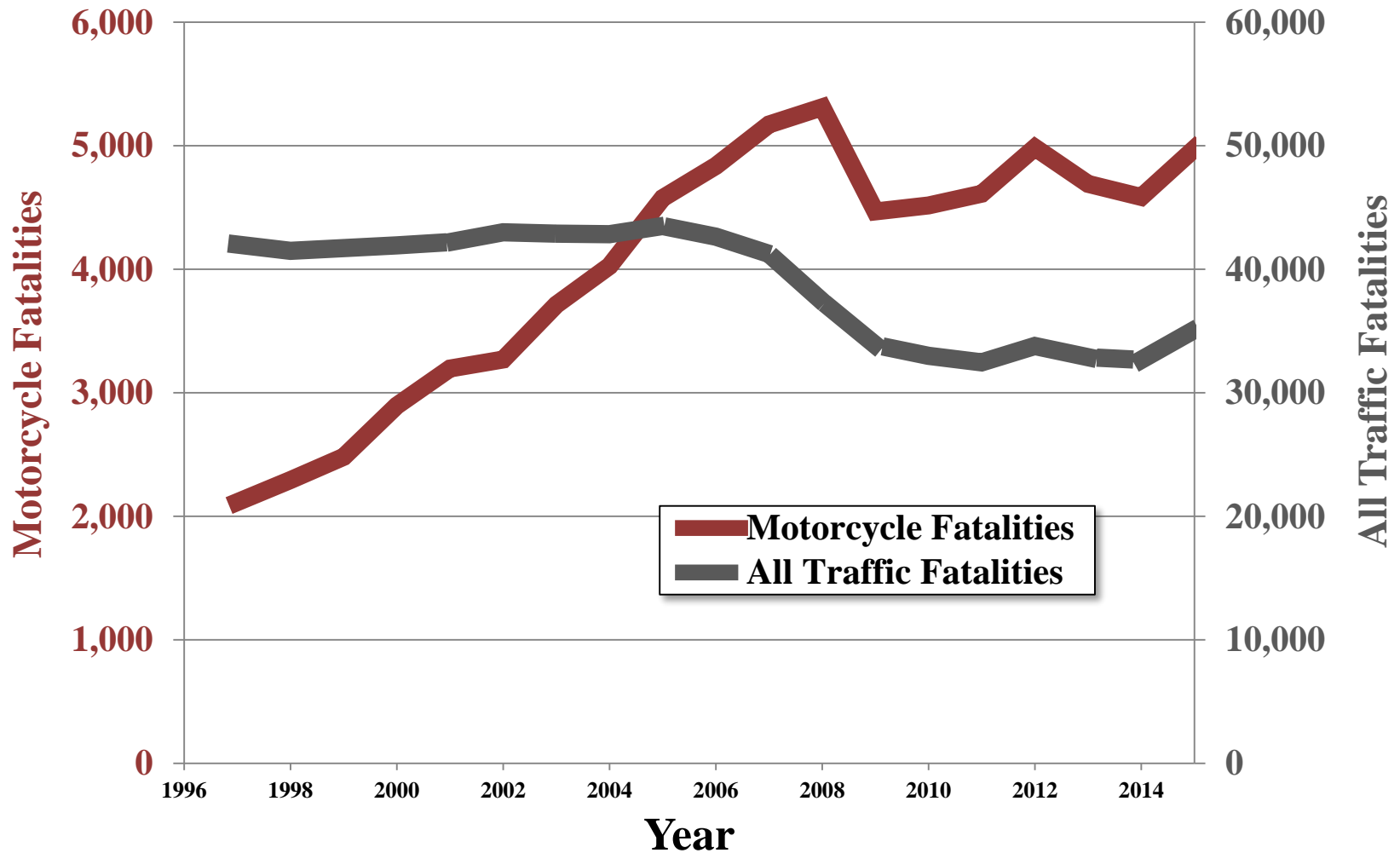
**Office of Safety Research & Development
Federal Highway Administration**

ELCSI-PFS Annual TAC Meeting
July 26-27, 2018

Presentation Outline

- Brief Description of Motorcycle Crash Causation Study (MCCS) database.
- Countermeasures Project Objectives.
- Tasks in Countermeasures Project.
- Analysis of MCCS database.
- Countermeasures Prioritization Workshop
- Final list of Countermeasures Implementation and Evaluation
- Next Steps
- Questions.

Why Study Motorcycles Crashes?



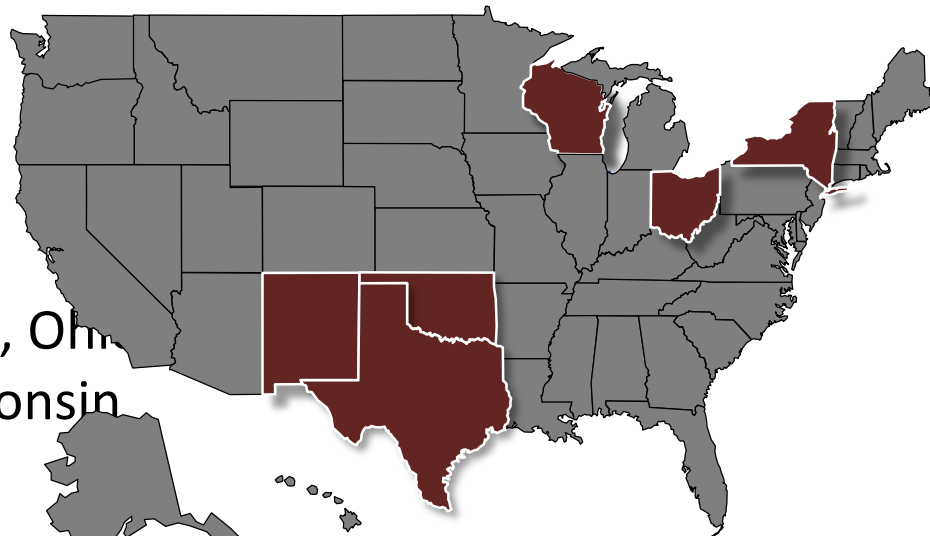
Congressional Response



- **Congress mandated the Motorcycle Crash Causation Study (MCCS)**
 - OECD Data Collection Protocol
- **NHTSA Pilot Study**
 - FHWA and NHTSA worked to develop data collection program
 - Final Report: June, 2010

MCCS Budget

- \$3.5 Million
 - USDOT
 - FHWA, NHTSA
 - Six State DOTs
 - New Mexico, New York, Ohio
 - Oklahoma, Texas, Wisconsin
 - AMA
- Data collected in Orange County, CA (Completed 2017)
- Sample Size
 - 351 Motorcycle Crash Investigations
 - 702 Control Rider Interviews



Identifying Infrastructure-Based Motorcycle Crash Countermeasures

Project Objectives:

- Analysis of Motorcycle Crash Causation Study (MCCS) database and Literature Review.
- Identify three to five infrastructure-based countermeasures to reduce motorcycle crashes on our nation's highway.

Project Tasks

- Two Phase project
- Phase I awarded to Texas A&M Transportation Institute
- Duration of Phase I is 15 months
- Project Tasks are as follows:
 - Literature review and analysis of MCCS (completed)
 - Conduct a half day workshop of major stakeholders to discuss literature review findings and arrive at a prioritized list of countermeasures (February 13th, 2018)
 - Develop a Phase II plan outlining implementation strategies of three to five countermeasures and evaluate their effectiveness on motorcycle crashes (draft completed)

Analysis of MCCS data

- Eight countermeasures identified that could address at least 500 motorcycle crashes per year.
 - Improving sight distance for intersections and non-intersections.
 - Installing no left turn signs.
 - Installing retroreflective striping.
 - Installing warning signs for intersections ahead and merging/oncoming traffic.
 - Installing stop signs.
 - Installing curve speed warning signs.

Prioritization Workshop

- Involved following stakeholders:
 - DOTs
 - NHTSA
 - Insurance Institute for Highway Safety (IIHS)
 - NTSB
 - California Highway Patrol
 - Universities
 - New York Police
 - Private Citizens

Prioritized List of Countermeasures

| Rank | Countermeasure | MCCS Analysis Alignment |
|------|---|---|
| 1 | 2.1 High Friction Surface Treatment; 2.2 Textured Pavement Markings | - |
| 2 | 2.3 Pavement Condition Repair | - |
| 3 | 1.2 Limited Sight Distance Warning Signs | Sight Distance-Segment; Sight Distance-Intersection |
| 4 | 2.6 Pavement Change Warning Sign | - |
| 5 | 3.1 Design for Motorcycle Sight Distance | Sight Distance-Segment; Sight Distance-Intersection |
| 5 | 5.5 Curve Speed Warning | Curve Speed Warning Signs |
| 6 | 5.1 Guardrail Continuous Protection System; 5.2 Retrofit Concrete Barrier | - |
| 7 | 5.11 Positive Guidance in a Work Zone | - |
| 8 | 5.8 Pavement Markings | Retro-reflective striping |
| 9 | 1.4 Signals | New Signal with Protected Turn Cycle |
| 10 | 1.5 Intersection/Merging Traffic Warning Signs | Warning Intersections/Driveway Ahead Sign |
| 11 | 1.3 Prohibitive Signs | Stop Sign; No Left Turn Sign |

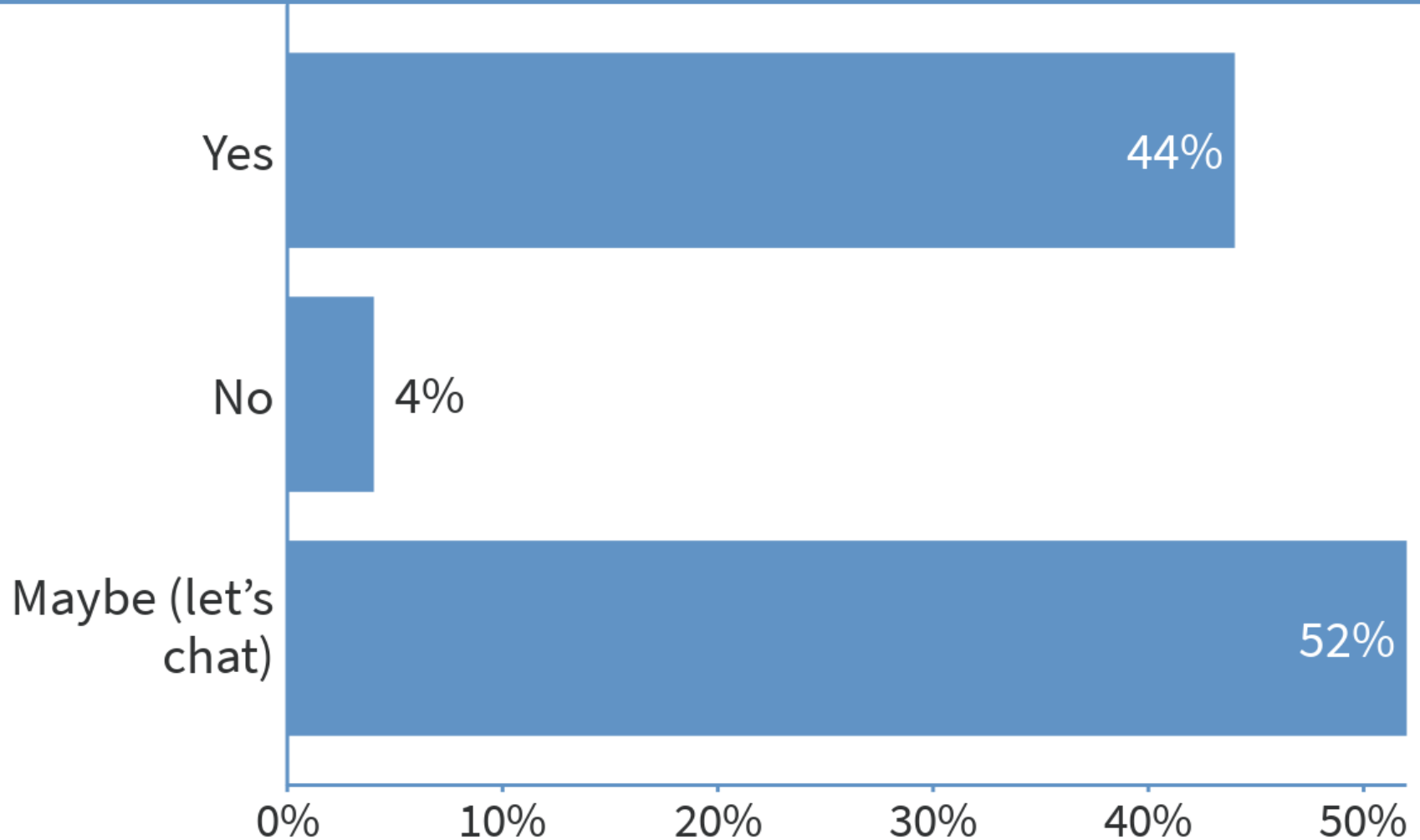
FHWA Recommendation

| FHWA Ranking | Workshop Ranking | Countermeasure | MCCS Analysis Alignment |
|--------------|------------------|---|--|
| 1 | 1 | High Friction Surface Treatment, Textured Pavement Markings | - |
| 2 | 3 | Limited Sight Distance Warning Signs | Sight Distance-Segment; Sight-Distance-Intersection |
| 3 | 4 | Pavement Change Warning Sign | - |
| 4 | 5 | Curve Speed Warning Sign | Curve Speed Warning Signs |
| 5 | 11 | Prohibitive Signs | Stop Sign; No Left Turn Sign |

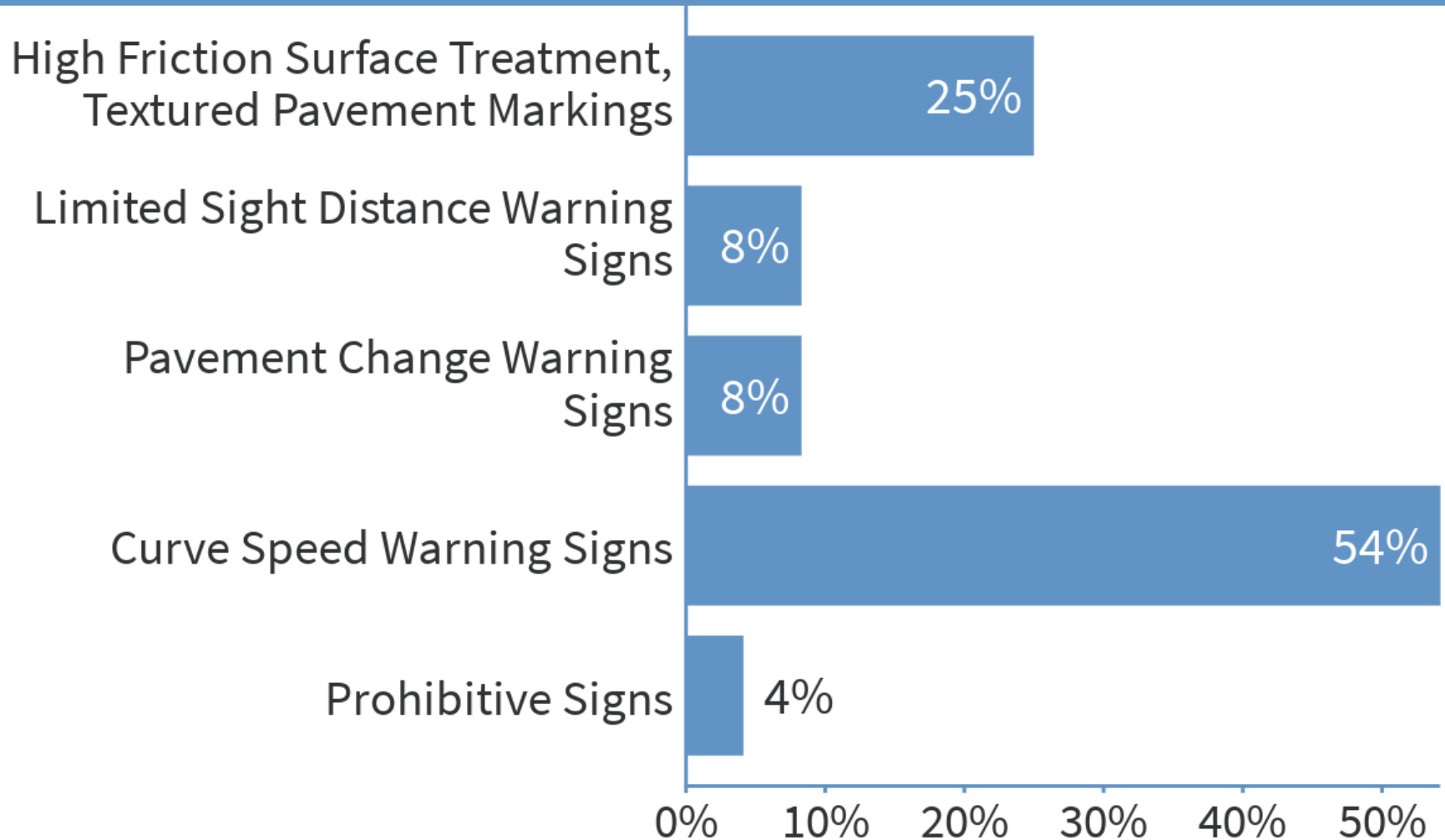
Next Steps: Implementation & Evaluation

- Looking for State and local partners
- Implementation (State and Local)
- Evaluation (FHWA)

Yusuf M. Poll Q1: Is your State interested in implementing any of the countermeasures



Yusuf M. Poll Q2: If yes, which would be your preference out of following five:



More Information

- **Contact Information**

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- **MCCS Website**

<http://www.fhwa.dot.gov/research/tfhrc/projects/safety/motorcycles/MCCS/index.cfm>

Questions?



Thank You