FHWA Motorcycle Safety Program: Infrastructure Based Motorcycle Crash Countermeasures

Yusuf Mohamedshah
Office of Safety Research & Development
Federal Highway Administration

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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?

The graph shows the number of motorcycle fatalities and all traffic fatalities from 1996 to 2014. The number of motorcycle fatalities has generally increased over this period, reaching a peak around 2008 before declining. All traffic fatalities have also increased over the same period, with a slight decrease around 2010. The graph indicates that motorcycles represent a significant portion of traffic fatalities, especially when compared to the overall trend in all traffic fatalities.
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
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

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

<table>
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<tr>
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<th>Workshop Ranking</th>
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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

- Yes: 44%
- No: 4%
- Maybe (let’s chat): 52%
Yusuf M. Poll Q2: If yes, which would be your preference out of following five:

- High Friction Surface Treatment, Textured Pavement Markings: 25%
- Limited Sight Distance Warning Signs: 8%
- Pavement Change Warning Signs: 8%
- Curve Speed Warning Signs: 54%
- Prohibitive Signs: 4%
More Information

• Contact Information
  Carol.Tan@dot.gov
  Yusuf.Mohamedshah@dot.gov

• MCCS Website
Questions?

Thank You