RURAL TRAFFIC SAFETY SOLUTIONS & COMMUNITY ENGAGEMENT

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Traffic Deaths Tend to Occur in Rural Areas

• US crash fatality rates from 2010-2019 were 3-fold higher in rural counties compared to metropolitan-urban counties (Adeyemi et al., 2022)

• The rate of crash deaths per 100 million miles travels was 1.72 in rural areas and 1.19 in urban areas (IIHS, 2023)

• In Minnesota, 56% of our 2022 fatal crashes occur in rural areas (MN DPS, 2023)
The reason for high rural death rates is complex

• Behavioral Differences
  – Lower seat belt use and proper child restraints (Shaw et al., 2022)
  – Higher rates of drunk driving (Friesen et al., 2022)
  – Greater incidence of driver fatigue (Al-Bdairi & Hernandez, 2020)

• Emergency Services Differences
  – Slower police response times (Liu, 2022)
  – Significantly longer EMS crash response times (Adeyemi et al., 2022).
  – Greater risk of undertriage (Deeb et al., 2020)
  – Limited or no access to pediatric trauma centers (Byrne et al., 2021)
  – Lower availability and skill of EMS providers (Morgan & Calleja, 2020).

• Infrastructural Differences
  – Horizontal curves (FHWA, 2023)
  – Roadside obstructions (Cheng et al., 2021)
  – Thru-STOP intersections (Preston, 2004)
J-turns reduce serious and fatal crash risks

The J-turn intersection decreases the points of conflict at an intersection

- Restricts straight crossing and left-turning movements from the minor road across the major highway
Some communities are resistant to J-turns

The non-conventional movements can lead to

- Frustration
- Slightly longer travel times
- Concerns about accessibility and access
Some communities are resistant to J-turns

First time road users can make errors ranging from minor to severe including:

- Late lane changes
- Missing the U-turn
- Cutting through the left-turn lanes
- Becoming disoriented
Community Pushback Can Slow Construction

- Community members who are resistant to J-turns may resist proposed construction
  - Raise concerns at community meetings
  - Contact their State Representative
  - Tell other Minnesotans how bad they are!
- Reaching community members with positive J-turn experiences before they are proposed and before their first encounter can be crucial to positive community reception
Leveraging the Power of Testimonials

Testimonials can persuade if they contain:

• Immerse the listener in a story
• Evoke a cognitive and affective response
• Are credible
• Have a strong message
James Erwin
Alumacraft Boats
St. Peter, MN
Willmar, MN
Art Benson
Immersive Low-Cost Experiences
Acceptance tends to shift following any engagement

<table>
<thead>
<tr>
<th>Presentation Method</th>
<th>Attitude Change</th>
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</thead>
<tbody>
<tr>
<td>Informational Video</td>
<td>Urban ((M = 4.77, SD = 3.46))</td>
</tr>
<tr>
<td>Narrative Storytelling</td>
<td>Suburban ((M = 3.90, SD = 3.58))</td>
</tr>
<tr>
<td>Simulation</td>
<td>Rural ((M = 3.75, SD = 3.01))</td>
</tr>
</tbody>
</table>
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![Bar chart showing changes in attitude scores for Good Idea, Willing to drive, and Support in Community. The scores are post-measured higher than pre-measured for each category.]
Tips on Using Persuasive Messaging

• Use a mixed-method communication strategies for upcoming roadway changes
  – Informational and educational materials
  – Audiences can differ and have different dispositions towards J-turns
• Find ways to get people to be personally involved prior to presenting educational information
  – For less-invested individuals, shorter persuasive messages are better
• Lead with information about J-turn benefits
• Testimonials are effective, but require credible messengers for the audience
• Testimonials should not be removed to meet time constraints


Thank you

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