Demonstration and Evaluation of Rational Speed Limits

Presented to:
Transportation Engineering Conference
November 19, 2003

funding provided by the Federal Highway Administration, #DTFH61-03-R-A-00104

Indiana Speed-Related Fatalities

<table>
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Program Objective

“...to determine the extent to which rationally established, well-publicized, and rigorously enforced speed limits lead to higher compliance and improved safety.”
### Budget Summary

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Engineering, Enforcement, and Administration</td>
<td>$200,375</td>
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<tr>
<td>Evaluation</td>
<td>$49,210</td>
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<tr>
<td>Public Information and Education</td>
<td>$42,000</td>
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<td>Total</td>
<td>$291,585</td>
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### Timeline

- **Baseline Data Collection**
  November 2003-June 2004
- **Public Information & Education**
  June 2004-October 2005
- **Enforcement**
  September 2004-October 2005
- **Collect Speed, Enforcement, PI&E Data**
  November 2004-October 2005
- **Final Report**
  February 2006

### Comparison Community

- **Tippecanoe County**
  - Median Age – 27.2
  - Population – 152,001
  - Population/Sq. Mile – 304.1
  - Per capita income – $25,537

- **Monroe County**
  - Median Age – 27.6
  - Population – 121,229
  - Population/Sq. Mile – 307.5
  - Per capita income – $25,302

### Demonstration Community

- **Tippecanoe County**
  - University – Purdue
  - Mileage – 870 miles
  - Licensed Drivers – 86,175
  - Vehicle Miles Traveled – 1,507,394,345

- **Monroe County**
  - University – Indiana
  - Mileage – 680 miles
  - Licensed Drivers – 69,044
  - Vehicle Miles Traveled – 956,874,959
Demonstration Road Segments

- County Roads
- Road Segment Lengths
  - 0.5 miles to 7 miles

Demonstration Road Segments

- Road Speeds
  - 30 to 55 MPH
- ADT Range
  - Low: 781 – 1,294 Vehicles/Day
  - High: 6,749 – 10,040 Vehicles/Day

Demonstration Road Segments

- Functional Classifications
  - Urban Major Collector
  - Rural Major Collector
  - Minor Arterial

Demonstration Road Segments

- Land Use
  - Residential
  - Rural
  - Commercial

Rational Speed Limits

- 85th percentile speed – starting point
- Other considerations
  - Crash history
  - Roadside development
  - Road geometries
  - The pace speed
  - Parking & pedestrians

Tippecanoe County Highway Engineering Department

Cindy Coddington, Traffic Supervisor
Procedure for Establishing Speed Limit by Ordinance

- First Hearing – proposed Ordinance read and voted on
- Second Hearing – proposed Ordinance read and voted on 2 weeks later
- First Publishing – week of the second hearing
- Second Publishing and Sign Posting – one week following the first publishing

Engineering Studies

- Data Collection
  - Nu-metrics Hi-Star Traffic Counters
  - Highway Data Management Software

PI&E Campaign

Managed by
Indiana Design Consortium
Lafayette, Indiana

PI&E Media Plan

- 2 Goals
  - Educate public about rational speed limits and inform them speed limits may be changing based on engineering studies
  - Inform public that speed limits will be strictly enforced, promoting awareness, compliance, and safety

PI&E Media Plan

- High-impact, creative theme with copy repeated throughout campaign to ensure saturation and visibility
- Target Population - Drivers in Tippecanoe County

Media Elements

- Press Conferences
- Press Releases
- Media Events
- Radio
- Newspaper
- Street Signs
- Johnny Ads®
  - indoor billboards in restrooms of malls, movie theaters, restaurants
Current PI&E Activities

- Letters informing county officials, prosecutors, judges, and state police about program
- Interviews with local media
- Conceptual Development of Campaign

Tippecanoe County Sheriff’s Department

Capt. Rick Walker
Sheriff William “Smokey” Anderson

Standard Operating Procedure and Policy

- 20 hours per week of additional enforcement of speed violations on target road segments

Tippecanoe County Speed-Related Citations, Jan 2000-Oct 2003

<table>
<thead>
<tr>
<th>Driver Age</th>
<th>2000 Tickets Issued</th>
<th>% Male Drivers Cited All Roads</th>
<th>2001 Tickets Issued</th>
<th>% Male Drivers Cited All Roads</th>
<th>2002 Tickets Issued</th>
<th>% Male Drivers Cited All Roads</th>
<th>2003 Tickets Issued</th>
<th>% Male Drivers Cited All Roads</th>
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</thead>
<tbody>
<tr>
<td>16-17</td>
<td>1,025</td>
<td>16</td>
<td>1,078</td>
<td>16</td>
<td>1,143</td>
<td>16</td>
<td>1,226</td>
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<tr>
<td>18-19</td>
<td>1,593</td>
<td>23</td>
<td>1,611</td>
<td>22</td>
<td>1,721</td>
<td>23</td>
<td>1,808</td>
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<td>20-21</td>
<td>1,548</td>
<td>21</td>
<td>1,611</td>
<td>21</td>
<td>1,715</td>
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<td>1,808</td>
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<td>22-23</td>
<td>3,548</td>
<td>12</td>
<td>8,004</td>
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<td>24-25</td>
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<td>91</td>
<td>19,744</td>
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<td>26-27</td>
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<td>17,995</td>
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<td>28-29</td>
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<td>142</td>
<td>15,771</td>
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<td>30-31</td>
<td>8,825</td>
<td>72</td>
<td>11,109</td>
<td>82</td>
<td>10,782</td>
<td>85</td>
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<td>32-33</td>
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<td>24</td>
<td>6,145</td>
<td>8</td>
<td>6,283</td>
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<td>34-35</td>
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<td>3,334</td>
<td>87,899</td>
<td>2,726</td>
<td>86,173</td>
<td>2,918</td>
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# Purdue University – CATS

- **History**
  - Click It or Ticket 2002 & 2003
  - Rumble Strips & Shoulders Study
  - Red Light Running
  - Commercial Vehicle Crash Analysis
  - Crash Outcome Data Evaluation System
  - Annual *Crash Facts* and Seat Belt Surveys

## Process

- Baseline Data Collection
- Public Information & Education Campaign
  - Earned and Paid Media
- Enforcement Campaign
- Post-Intervention Measurements

## Data Collection

- Tippecanoe Court Records & BMV Records
- Citation Data
- Crash Data (Injury Severity, Economic Losses)
- Public Opinion Evaluations

## Reporting Goals

### Engineering

- Report on traffic volume per road segment by driver speeds
- Report on crashes by road segment
- Report on economic losses sustained due to crashes, pre and post

### Education

- Report on awareness/opinion by driver age, gender, vehicle type, etc.
- Report on awareness/opinion by paid vs. earned media
- Report on enforcement effort/public perception

### Enforcement

- Report on number of citations issued by cited speed, traffic volume, time of day, driver age, etc.
- Report on compliance/conviction rates, pre and post intervention
INDIANA SPEED-RELATED FATALITIES

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In Summary.....
Engineering Education Enforcement
Higher Compliance, Improved Safety and Fewer Fatalities

Questions???

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