High Tension Cable Barrier in Median

Change in Fatal and Serious Injury Crashes, 2001-2011

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Selection Criteria

• Segments
  – High Tension Cable Barrier in median
  – Barrier installed 2004-2008
  – 31 segments identified

• Crash Data
  – 3 years before installation
  – 3 years after installation
  – Only cross-median crashes

• Before, All Segments
  – 19 fatal crashes
  – 8 serious injury crashes
  – 57 moderate injury crashes
  – 99 possible injury crashes
  – 281 property damage crashes

• After, All Segments
  – 0 fatal crashes
  – 6 serious injury crashes
  – 58 moderate injury crashes
  – 114 possible injury crashes
  – 1,022 property damage crashes
Sample Segment, I-35

- 35E/35W split to US 14
- Before
  - 8 fatal crashes
  - 3 serious injury crashes
- After
  - 0 fatal crashes
  - 2 serious injury crashes
Before and After

• No fatal crashes in after period!
• Severity of cross-median crashes shifted down!
  – Visually, percent of segments with increase in crashes decreases as severity increases.

Legend:
- Red: Percent of roadways with *increase* in crashes.
- Yellow: Percent of roadways with no change in crashes.
- Green: Percent of roadways with *decrease* in crashes.
Observed Change in Crashes

• No fatal crashes in after period!

• High Tension Cable Barrier in the median is intended to reduce severity rather than decrease total crashes
  • Confirmed in analysis.

• Total Crashes + 251%
  • - 100% fatal
  • - 25% serious injury
  • + 2% moderate injury
  • + 15% possible injury
  • + 264% property damage

• Statistically significant change in fatal ($p = .001$) and property damage ($p = .000$) crashes
Crash Savings

• Total Crash Cost:
  • Before = $29,690,400
  • After = $18,344,800

• Observed 38% reduction in TOTAL crash costs!

• Calculated with conservative costs:
  Fatal = 2 × A Injury.

• Average Crash Cost:
  • Before = $63,988
  • After = $15,287

• Observed 76% reduction in AVERAGE crash costs!

• Weighted average by prevalence of total crashes.