Road Safety Assessments

Case Study

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RSA Background

- Black Hawk County request – May 3, 2016
- Site – intersection of Wagner Road and West Dunkerton Road
- Severe crash about one month prior, fatal within last 8 years
- Wanted independent party to take a look

- Four member team, assessment on July 7, 2016
- Joined by secondary roads, state patrol, sheriff's dept., local care center staff
Site Characteristics - Location
Site Characteristics - Geometrics

- At-grade intersection
- West Dunkerton Road stop-controlled
  - LED-border stop signs
  - “Cross Traffic Does Not Stop” plaques
  - Stop Ahead advance warning signs
  - Rumble strips
- 55 mph speed limits (but transition to south on Wagner)
- Volumes – 1300 (east), 960 (west), 1150 (north), 2110 (south) veh./day
Site Characteristics – Crash History

- 2006 – 2016 - eleven crashes
  - One fatal crash (2008)
  - Three maj. inj., three min. inj., and four PDO
- Nine crashes - some form of failure to stop
- Seven crashes involved SB and WB vehicles
- Six crashes occurred between Apr. 8 and May 15
- No crashes between Nov. and Mar.
- No time of day or weather issues
Site Review – Approach Photos

Wagner Road SB
Site Review Observations 2/2

• Good:
  • Pavement markings and rumble strips
  • Ditch vegetation mowed back
  • Vehicles were stopping

• Possible issues:
  • Vehicles stopped near stop sign and eased forward, or
  • Stopped closer to intersecting roadway
Site Review Observations 2/2

- Commonality in crash cause
  - Inability to gage approaching cross traffic speeds?
  - Distraction?
  - Speed?
- Urban to rural transition area
  - First intersection SB vehicles encounter w/ high cross traffic
  - Int. difficult to perceive on Wagner Road approaches (esp. SB)
  - Speed limit increase NB – speed differential between NB and SB traffic through int.
Suggested Improvements

- **Short term:**
  - Enhance existing signs - oversize, add second, fluorescent, beacons or pennants
  - Evaluate stop sign and stop bar locations, continue maintaining markings
  - Add intersection warning signs on Wagner Road
  - Stopping and speed enforcement

- **Mid term:**
  - Conduct speed study on West Dunkerton Road
  - Stopping and speed enforcement
  - Evaluate intersection conflict warning systems (ICWS) to maintain markings

- **Long term:**
  - Education program for care center employees on internal safety and distracted driving
  - Add Intersection Conflict Warning System (ICWS)
  - Consider conversion to roundabout
  - Add intersection warning signs on Wagner Road
  - Stopping and speed enforcement
Implemented Improvements

- Placed four 48-inch diamond grade stop ahead signs on Dunkerton Road.
  - Speed enforcement
  - Replaced existing signs
  - Included new posts
- Placed two intersection warning signs on Wagner Road.
  - Signs previously not present
  - Increasing dual speed radars – speed study

Images: Cathy Nicholas
Conclusions

• Crash data suggested failure to stop issues
• Field observations strengthened this data point
• Variety of suggested improvements identified
• Signing improvements deployed

• Since August, 2016 – three PDO crashes
  • Driver distraction
  • Failure to yield ROW (left)
  • Cross centerline (~130 feet from intersection)
Questions?

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