Intersection Safety Implementation Plan

Interim Update for NCTCOG



Safe Roads for a Safer Future Investment in roadway safety saves lives

http://safety.fhwa.dot.gov

Realizing the SHSP Vision and Goals

- The general consensus among those involved in transportation safety is that further reductions are not only desirable, but feasible
- The target goal for Texas in 2006 was 1.40 fatalities and 41.2 serious injuries/HMVMT



SHSP Strategies

- Develop emphasis area action plans.
- Implement engineering solutions to reduce red-light running
- Eliminate limited sight distance on all roads
- Enhance advanced warning at intersections



Approaches to Saving Lives and Preventing Serious Injuries



Systemic Approach for Intersections

New Emphasis in MAP-21:

"The term 'systemic safety improvement' means an improvement that is widely implemented based on high risk roadway features that are correlated with particular crash types, rather than crash frequency."

- Converse of "traditional" approach
- Use of known, cost effective countermeasures
- Install systematically over wide area
- Top 3-8% of intersections typically bear 25-40% crashes
- Opportunity to substantially reduce intersection fatalities

Key: Making Intersections Incrementally Safer

- Increase **visibility** of intersections and traffic control devices
- Increase <u>awareness</u> of intersections
- Improve the <u>design</u> of intersections to reduce conflicts
- Improve driver <u>comprehension</u> to reduce confusion
- Improve the **<u>operations</u>** of intersections
- Improve sight distance at intersections
- Improve driver <u>compliance</u> with traffic control devices

Key Systemic Countermeasures

- Both Stop-Controlled and Signalized Intersections
 - Basic set of sign and marking improvements
 - Access management of high volume driveways within 50-100 feet
 - Delineate or remove fixed objects at intersections
- Stop-Controlled Intersections
 - Improve sight distance where restricted
 - Splitter islands
- Signalized Intersections
 - Improve signal visibility and conspicuity
 - Update clearance intervals to ITE stds
 - Protected-only left turn phases





Basic Countermeasures

- Twelve-inch LED lenses on all signal heads.
- Back plates on all signal heads (optional reflectorized border).
- A minimum of one traffic signal head per approach lane.
- Traffic signal yellow change interval and all red interval timing adjusted to be in accordance with the Institute of Transportation Engineers (ITE) timing standards.
- Elimination of any late night flashing operations.

Basic Signalized Int. Countermeasures



Intersection Safety Implementation Plans

NCTCOG INITIAL DATA ANALYSIS

General Overview 5-Yr Intersection Data Summary

Year	К	Α	В	С	0	Unknown	Total	KAB Total	% KAB
2006	156	1,342	5,856	12,101	26,397	1,314	47,166	7,354	16%
2007	174	1,333	6,039	12,017	22,387	935	42,885	7,546	18%
2008	157	1,276	5,834	11,003	22,901	882	42,053	7,267	17%
2009	125	1,191	5,619	11,379	23,600	1,017	42,931	6,935	16%
2010	92	1,215	5,414	9,831	22,779	677	40,008	6,721	17%
Total	704	6,357	28,762	56,331	118,064	4,825	215,043	35,823	17%

Intersections in North Central Texas

215,043 intersection crashes from 2006 to 2010:

- 35,823 serious injuries or deaths
 - 77% of the total intersection cost
 - 48% urban environment
- 15,008 intersections at least one crash

Intersections and Severe Crashes

- The total cost of intersection crashes in North Central Texas is estimated to be \$11.6B over the five-year period
- Severe intersection crashes accounted for:
 - 17 % of all intersection or intersection-related crashes
 - 77 % of the total cost of intersection crashes
 - Rural areas accounted for approximately 52 % of the cost.
 - Urban areas accounted for approximately 48 % of the cost.

Intersection Types Selected

- The top intersection types for severe crashes are:
 - All URBAN intersections, excluding 3-legged/stop-controlled
 - All SIGNALIZED intersections (rural, urban, and unspecified)
- 5 or more KAB crashes:
 - 1,522 intersections (or 10% of those anaylzed)
 - 13,320 severe crashes (40% of the total severe intersection crashes)
- Suggested primary focus on Urban Signalized intersections subset (1,225 intersections)

Key Local Jurisdictions

Top Ten Jurisdictions with 5 or more KAB Intersections	No. of Intersections	Percent of Total	Cumulative Percent
DALLAS	346	28.2%	
FORT WORTH	167	13.6%	
ARLINGTON	116	9.5%	
PLANO	106	8.7%	
GARLAND	59	4.8%	65%
RICHARDSON	42	3.4%	
DENTON	35	2.9%	
GRAND PRARIE	32	2.6%	
LEWISVILLE	27	2.2%	
IRVING	24	2.0%	78%

Intersection Safety Implementation Plans

NEXT STEPS

Next Steps for Completing ISIP

- Feedback on Initial Data Analysis
 - Safety Advisory Committee (SAC)
- Feedback on Countermeasures/Packages (local & SAC)
 - Mix of Treatments
 - Estimated Effectiveness (Local input)
 - Average Cost
 - Deployment Level
- Refine proposal, Schedule Workshop,

Keys to Implementation

- Identify champions, assign roles and responsibilities
- Identify funding over a defined period of time
- Determine improvement method
 - regional/local multi-intersection contract
 - local state or local government forces)
- Arranging for adequate field review/design/inspection

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QUESTIONS

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