

ILLINOIS STATEWIDE CONGESTION ANALYSIS STUDY - STATEWIDE CRASH RECOVERY ANALYSIS



CLIENT:
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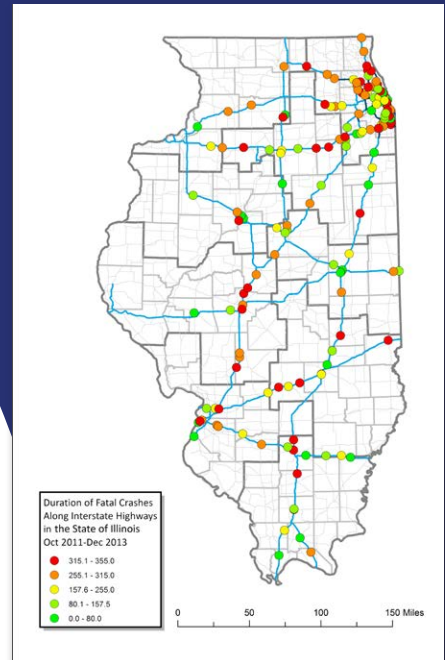
CONTRACT:
PTB 168, Item 29 - \$1.49 million

PROJECT PURPOSE:

- Determine Impacts of Roadway Incidents on Congestion
- Calculate Travel Time Changes Due to Roadway Incidents
- Identify Factors Affecting Time for Incident Recovery

DAMA used the National Highway Traffic Safety Administration Fatality Analysis Reporting System (FARS) data to identify the locations, times, and characteristics of crash incidents across the state and the types of vehicles and conditions involved in these incidents. DAMA matched the locations and times to travel time data from the FHWA National Performance Management Research Data Set (NPMRDS) to identify the amount of time before a crash incident was cleared and no longer impacted traffic flow.

The initial review of FARS data provided a study framework to compare the conditions of particular crashes and how those conditions could increase safety risks to motorists and increase the time before first responders and roadway equipment are able to restore a roadway to normal operations. These methods were later applied to study crash incidents and conditions along three corridors and the factors that contribute to crash occurrences and increase incident recovery times.



Duration of Fatal Crashes Along Interstate Highways in the State of Illinois Oct 2011-Dec 2013

- 315.1 - 355.0
- 255.1 - 315.0
- 157.6 - 255.0
- 80.1 - 157.5
- 0.0 - 80.0

Type of Work Zone

Table 5-5: Type of Work Zone of Fatal Crashes on Illinois Interstates, Oct. 2011-Dec. 2013

Type of Work Zone of Fatal Crashes on Illinois Interstates 2011-2013	Average Incident Duration by Type of Work Zone (Incident Frequency)			Total Fatal Crashes
	Name	Construction	Maintenance	
DISTRICT 1	Chicago	233.60 (89)	204.17 (6)	355.00 (1)
	Rural			0
DISTRICT 2	St. Louis	385.00 (2)		0
	Rural	162.00 (5)	340.00 (1)	0
DISTRICT 3	Champaign	190.00 (1)	315.00 (1)	0
	Rural	207.50 (16)	320.00 (1)	17
DISTRICT 4	Alton	118.75 (4)		4
	Rural	143.75 (4)		4
DISTRICT 5	Springfield	150.00 (1)	95.00 (1)	2
	Rural	19.25 (1)		1
DISTRICT 6	Champaign/Urbana	165.00 (1)		3
	Rural	242.00 (5)		5
DISTRICT 7	Springfield	265.25 (4)		4
	Rural	231.88 (8)		8
DISTRICT 8	Chicago	244.27 (12)	255.00 (2)	14
	Rural	230.00 (13)		13
DISTRICT 9	St. Louis	187.50 (2)		2
	Rural	152.27 (11)	315.00 (1)	12
	Total	233.60 (148)	238.64 (13)	268.75 (4)

Source: NPMRDS Dataset, FARS Dataset

The FARS data pertaining to work zone accidents relies on American National Standard Institute (ANSI) designations that describe a construction zone as work involving a long-term stationary construction area, such as building a new bridge or adding travel lanes, whereas, a maintenance zone pertains to work involving moving activities, such as striping, mowing, pothole repair, or snowplowing. As shown, a total of 13 fatal crashes occurred in a construction or maintenance zone, with totals of 11 and 4, respectively. These work zone fatalities account for 7.6% of the total (13/170). The average clearance time for crashes that occurred in maintenance zones was longer than non-work zone crashes. The average roadway clearance time in construction zones averaged only around 2% longer (218.64-213.80/213.80) than non-work zone times. For maintenance zones, the roadway clearance times averaged around 21% longer (258.75-213.80/213.80) than non-work zone times.