



# ILLINOIS STATEWIDE CONGESTION ANALYSIS STUDY - ITS



**CLIENT:**  
Illinois Department of Transportation

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

- PROJECT PURPOSE:**
- Evaluate Economic and Demographic Drivers of Travel Demand
  - Assess ITS Implementations Using Multiple Methods
  - Analyze and Model ITS Alternatives to Mitigate Congestion

DAMA evaluated existing Intelligent Transportation System (ITS) installations across three Interstate corridors in the Chicago, Rockford, and St. Louis metropolitan areas. This evaluation identified the locations and capabilities of these installations and how these installations manage traffic and incidents along these corridors. These installations were also matched with reported incidents and identified how ITS technologies could have responded to these incidents.

The project team evaluated conditions along each corridor and compared existing installations to the FHWA recommendations for optimal ITS installations. DAMA developed dynamic simulation models for each corridor in the VISSIM modeling package to represent existing and recommended installations and to evaluate the potential corridor performance improvements due to the recommended changes. The VISSIM simulations evaluated additional scenarios including the implementation of truck-only toll lanes, variable speed limits, and adaptive ramp metering. DAMA developed cost estimates for the recommended improvements and the estimated benefits of these improvements.

The project team also developed methods and tools to help agencies to compare the costs and benefits of ITS installations to other corridor improvements and balance needs across geographies and categories.

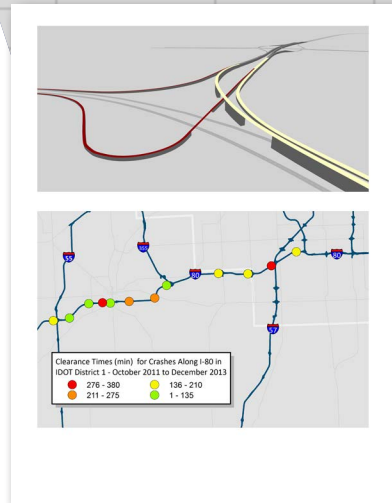
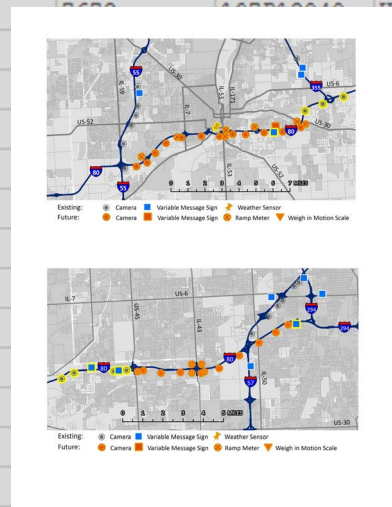


Table 13-16: Cost Estimates of ITS Infrastructure for the Three Study Corridors

ITS Equipment	Unit Cost (2014 dollars)		No.	Total Cost	
	Low Estimate	High Estimate		Low Estimate	High Estimate
Closed Circuit Television (CCTV) Video Camera	\$7,000	\$15,000	21	\$147,000	\$315,000
CCTV Video Camera Tower	\$5,000	\$14,000	21	\$105,000	\$294,000
Hardware, Software for Traffic Surveillance	\$138,000	\$169,000	1	\$138,000	\$169,000
Conduit Design and Installation (Per Mile)	\$53,000	\$79,000	28	\$1,484,000	\$2,212,000
Fiber Optic Cable Installation (Per Mile)	\$23,000	\$55,000	56	\$1,276,000	\$3,080,000
Dynamic Message Sign	\$92,000	Some	1	\$92,000	\$92,000
Dynamic Message Tower	\$143,000	Some	1	\$143,000	\$143,000
Software for Traffic Information Dissemination	\$18,000	\$23,000	1	\$18,000	\$23,000
Ramp Meter	\$19,000	\$38,000	17	\$323,000	\$646,000
Weigh-in-Motion Device	\$46,000	\$193,000	0	\$0	\$0
<b>Totals</b>				<b>\$3,629,000</b>	<b>\$6,782,000</b>

ITS Equipment	Unit Cost (2014 dollars)		No.	Total Cost	
	Low Estimate	High Estimate		Low Estimate	High Estimate
Closed Circuit Television (CCTV) Video Camera	\$7,000	\$15,000	5	\$35,000	\$75,000
CCTV Video Camera Tower	\$5,000	\$14,000	5	\$25,000	\$70,000
Hardware, Software for Traffic Surveillance	\$138,000	\$169,000	1	\$138,000	\$169,000
Conduit Design and Installation (Per Mile)	\$53,000	\$79,000	6	\$318,000	\$474,000
Fiber Optic Cable Installation (Per Mile)	\$23,000	\$55,000	12	\$276,000	\$660,000
Dynamic Message Sign	\$92,000	Some	0	\$0	\$0
Dynamic Message Tower	\$143,000	Some	0	\$0	\$0
Software for Traffic Information Dissemination	\$18,000	\$23,000	0	\$0	\$0
Ramp Meter	\$19,000	\$38,000	1	\$38,000	\$76,000
Weigh-in-Motion Device	\$46,000	\$193,000	1	\$46,000	\$193,000
<b>Totals</b>				<b>\$883,000</b>	<b>\$1,678,000</b>

Illinois Statewide Congestion Analysis Study - Chapter 13 - Evaluation of Three Corridors (DRAFT) 13-30

IMAGE SOURCE: ESRI, Inc., and Others. "Basemap: World Imagery." ArcMap 10.3 PC Software. Retrieved 30 October 2015.

107N05035