

2017 State Transportation Plan Modeling Support

MTMUG

October 26, 2016



Background/update cycle

- 23 CFR § 450.214(a): *The State shall develop a long-range statewide transportation plan, with a minimum 20-year forecast period at the time of adoption, that provides for the development and implementation of the multimodal transportation system for the State...*
- The plan provides direction for planning efforts and investment decisions for each mode
- *Iowa in Motion – Planning Ahead 2040* adopted May 8, 2012
- 5-year update cycle
- Targeting May 2017 adoption

Key changes from 2012 Plan

- Enhanced stakeholder and public input
 - Internal Steering Committee; Action Plan Focus Group
 - Multiple public input opportunities
- Include performance measures as required by MAP-21/FAST Act, as well as others that are relevant
- Include an Action Plan with specific short-range, long-range, and ongoing department strategies and improvements
 - Greater specificity requires additional supporting analysis

Highway improvements analysis

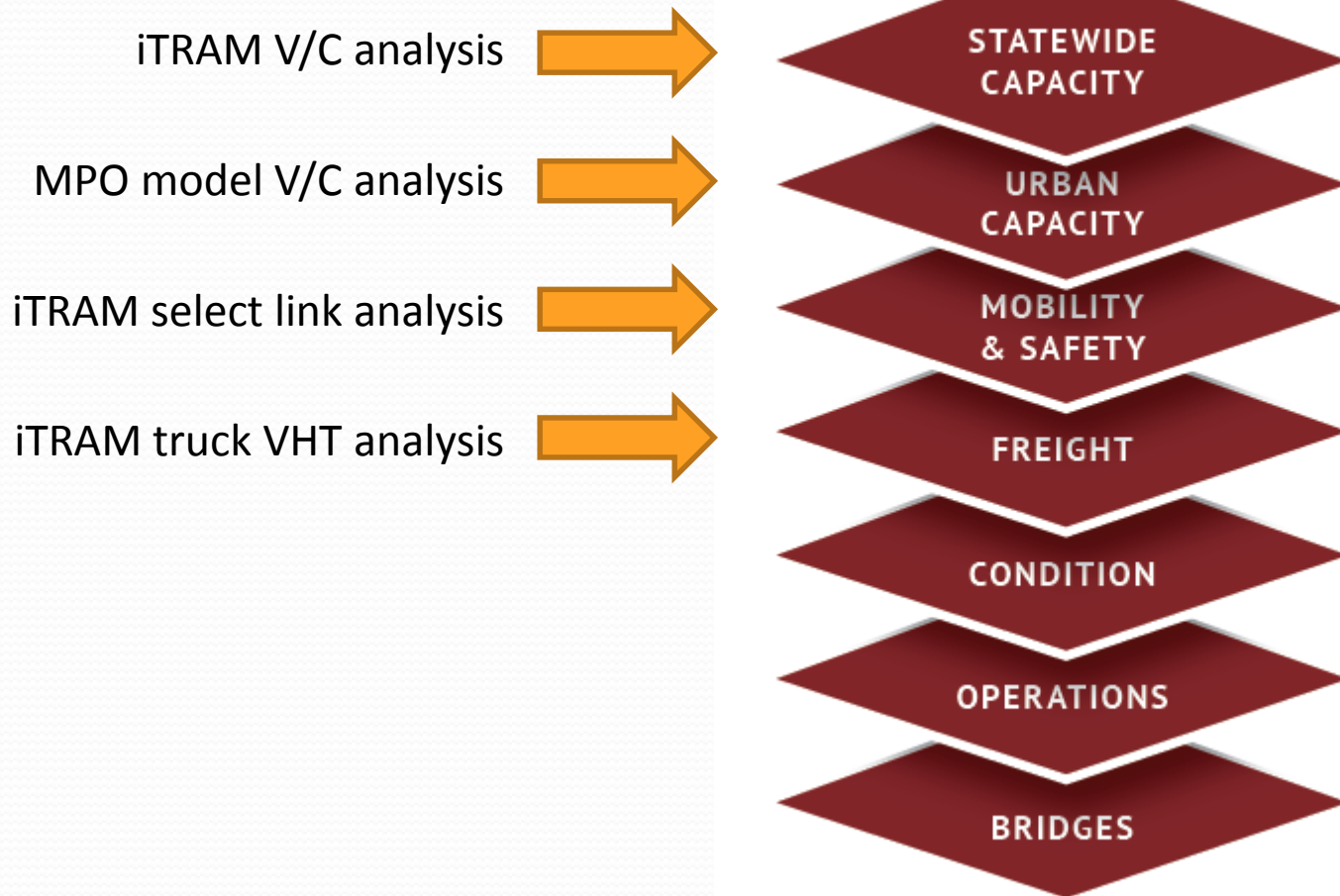
- Analysis identifies **corridor-level needs** for most categories
- Analysis does not define types of treatments to be implemented to address needs or identify specific projects or alternatives
- Analysis helps provide corridor-level perspective as individual projects are developed, and ensure identified needs are taken into account during project development

Highway improvements analysis

- Analysis to identify highway improvement needs across various categories
- Modeling support was provided for several layers of this analysis



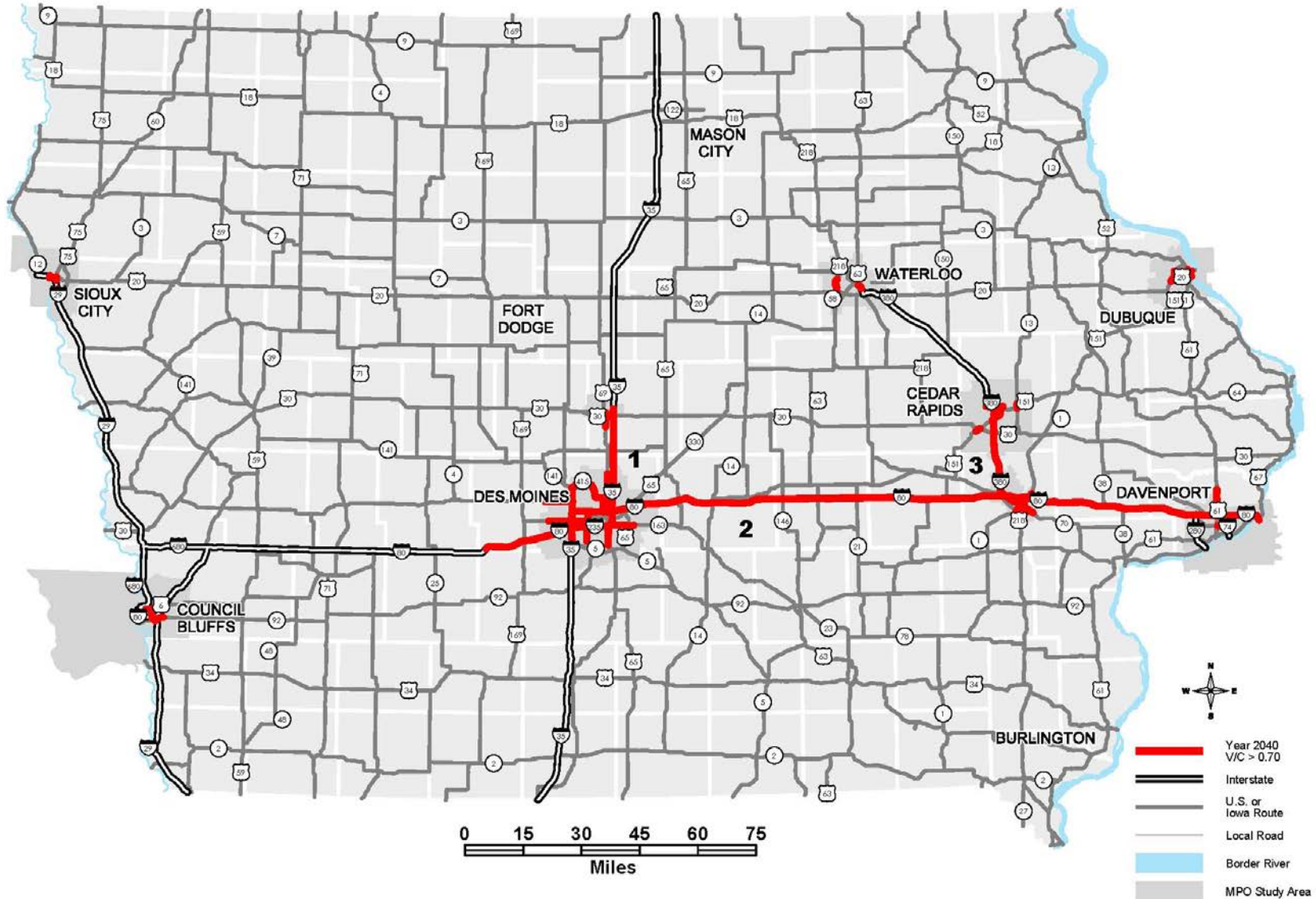
Highway improvements analysis



Capacity needs analysis

- Statewide capacity analysis
 - iTRAM results – future segments approaching/over capacity show higher V/C ratios in urban areas and key interstate corridors: I-35 between Des Moines and Ames; I-380 between Iowa City and Cedar Rapids; I-80 from central Iowa to the Mississippi River
- Urban capacity analysis
 - Used MPO models to analyze forecast congestion in urban areas
 - Applied standard analysis process to ensure consistent methodology across nine MPO models

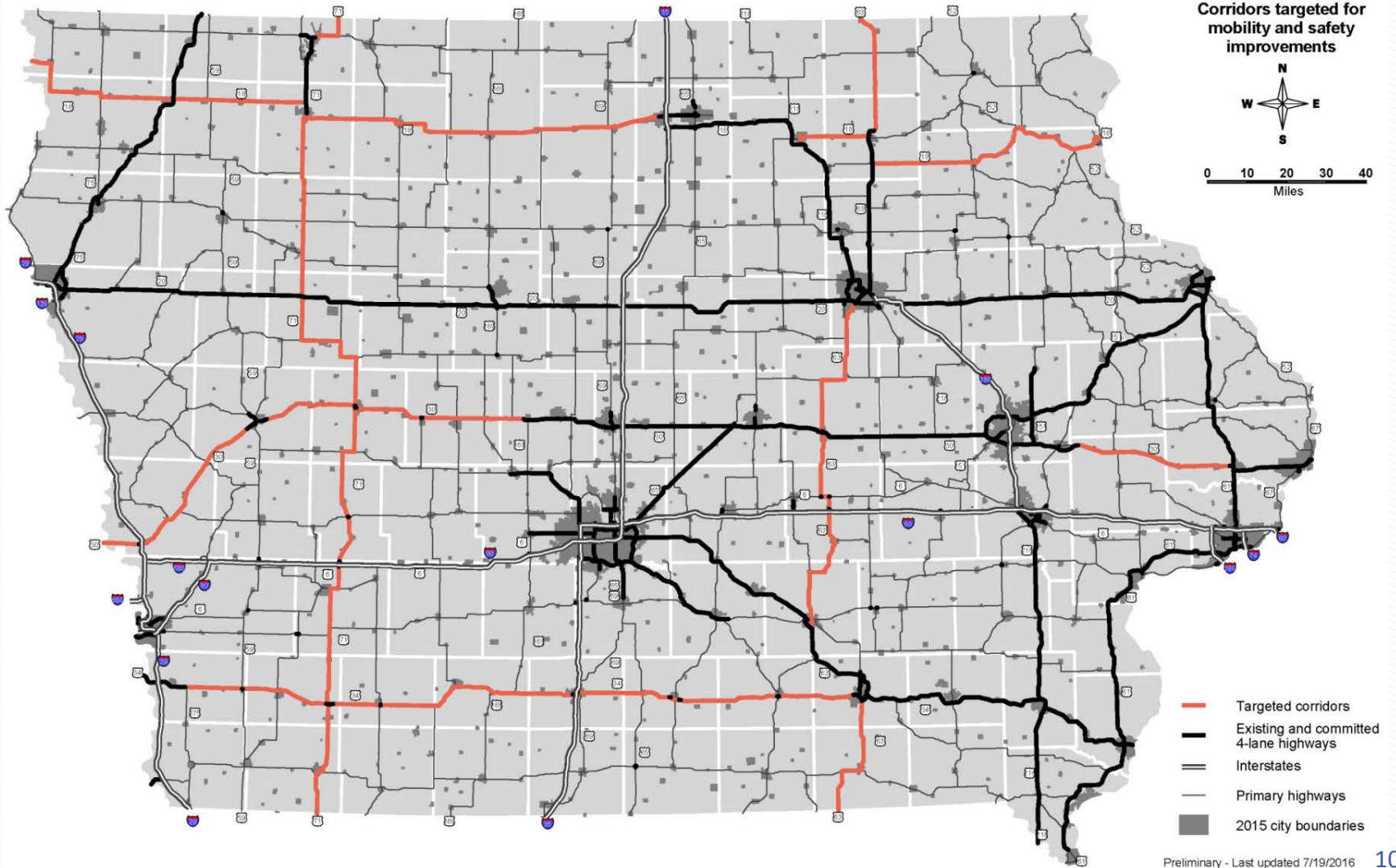
Future capacity needs analysis



Mobility and safety analysis

- Used review of several primary system elements and factors such as **connectivity**, **geographic access**, and existing networks to identify corridors that do not need 4-lane capacity expansion, but could be targeted for mobility and safety improvements
- Types of improvements could include:
 - Paved shoulders
 - Limited access
 - Geometric improvements
 - Left and right turn lanes
 - Acceleration lanes
 - Climbing/passing lanes
- Improvements would be less prescriptive than past Super-2 approach, more opportunistic

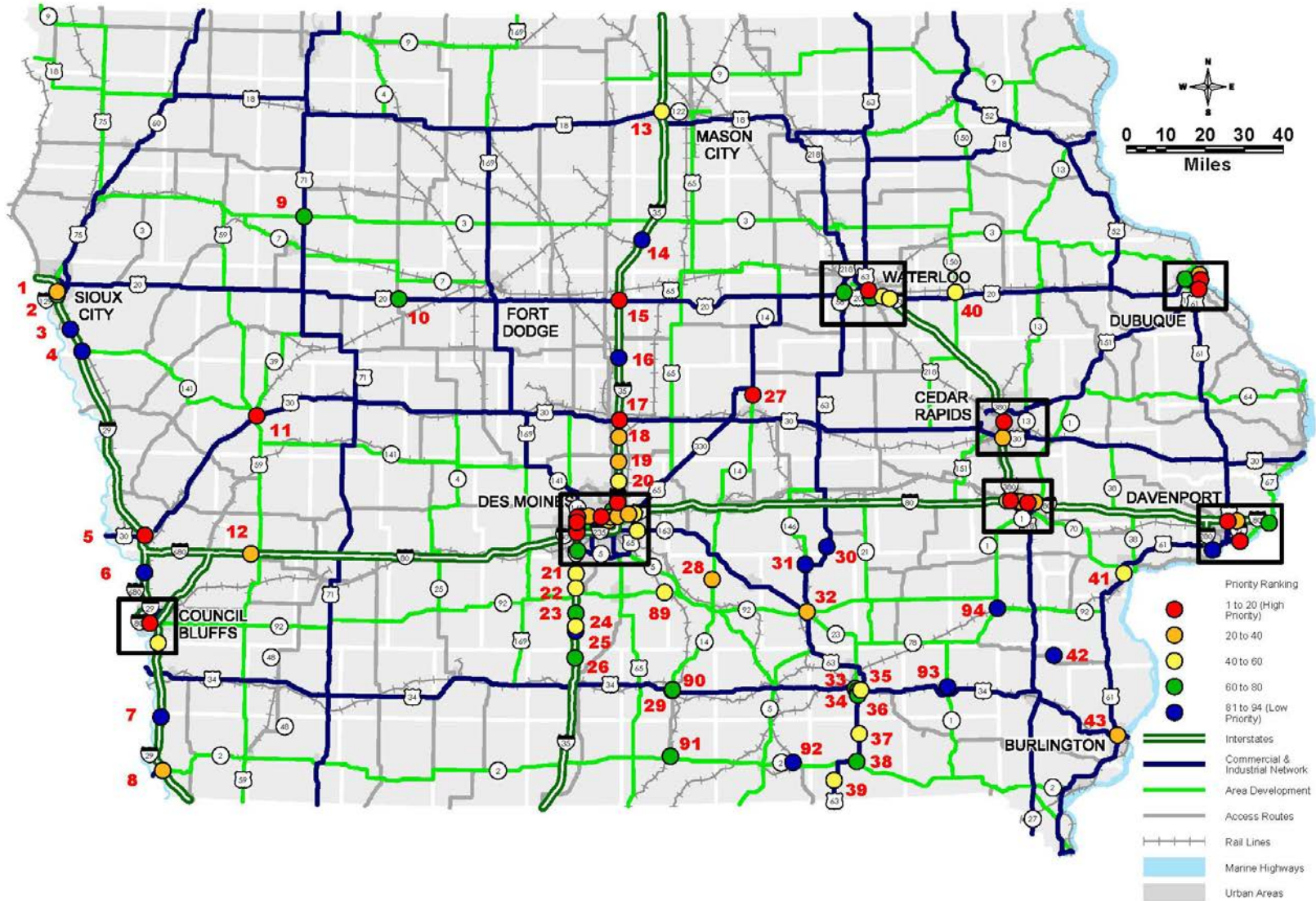
Mobility and safety analysis



Highway freight improvement locations

MAP ID	LOCATION	VALUE		CONDITION		PERFORMANCE		TIE		PRIORITY RANK
		ITRAM	"V" RANK	ICE	"C" RANK	INRIX	"P" RANK	AVERAGE RANKING	TRUCK VOLUME	
48	I-80/29 N/S THROUGH COUNCIL BLUFFS	60.79	32	52.82	2	374	16	16.67	13579	1
47	US-151 N/S @ MAQUOKETA DR	53.29	38	57.36	6	1040	6	16.67	2115	2
87	I-74 @ MISSISSIPPI RIVER	90.95	23	65.53	23	706	9	18.33	2908	3
57	I-35/80 N/S, E/W @ IA-141	49.26	43	61.17	13	2036	2	19.33	12761	4
76	I-380 N/S THROUGH CEDAR RAPIDS	76.37	26	55.34	4	123	33	21.00	7226	5
5	US-30 E/W THROUGH MISSOURI VALLEY	21.80	58	54.31	3	1563	4	21.67	993	6
79	I-380 N/S @ I-80/EXIT 0 & I-80 E/W @ I-380/EXIT 239	146.63	10	73.35	47	250	24	27.00	11161	7
15	I-35 N/S @ US-20/EXIT 142 & US-20 E/W @ I-35/EXIT 153	114.43	17	73.91	51	420	14	27.33	5559	8
55	I-35/80 N/S @ DOUGLAS AVE	52.83	41	59.84	11	116	34	28.67	12884	9
66	IA 160 E/W @ I-35 & I-35 N/S @ IA-160/ EXIT 90	108.67	18	69.29	36	114	35	29.67	8331	10
11	US 30 E/W @ US-59/IA-141	60.33	33	70.81	41	387	15	29.67	1377	11
84	US-61 N/S @ I-80/EXIT 123 & I-80 E @ US-61/BRADY ST/EXIT 295	53.65	36	69.57	37	368	17	30.00	11230	12
51	I-80/I-35/I-235 N/S, E/W @ SW MIX MASTER	92.24	22	73.83	50	365	18	30.00	6870	13

Highway freight improvement locations



Highway improvement matrix

- Intend to show a matrix of various types of improvements identified through analysis
 - Capacity (statewide and urban)
 - Mobility/safety
 - Freight
 - Condition
 - Operations
 - Bridges

Highway improvement matrix

Route	Corridor	Counties	Miles	Capacity	Mobility/ Safety	Freight	Condition	Operations	Bridge	
Interstates	I-80	jct of I-74 to Illinois border <i>Freight improvement at location IDs 85, 88</i>	Scott	8.9			2		34/54	2
		jct of I-280 to jct of I-74 <i>Freight improvement at location IDs 84, 85</i>	Scott	7.8			2		24/54	3
		jct of US 6 to jct of I-280	Scott, Cedar	18.7					25/54	2
		jct of IA 1 to jct of US 6	Cedar, Johnson	24.6					29/54	
		jct of I-380/US 218 to jct of IA 1 <i>Freight improvement at location IDs 79, 80, 81, 82, 83</i>	Johnson	7.1			5		22/54	
		jct of US 151 to jct of I-380 <i>Freight improvement at location IDs 78, 79</i>	Johnson, Iowa	19.7			2		42/54	
		jct of US 63 to jct of US 151	Iowa, Poweshiek	32.8					31/54	1
		jct of IA 14 to jct of US 63	Jasper, Poweshiek	27.6					38/54	
		east mixmaster to jct of IA 14 <i>Freight improvement at location IDs 62, 63, 64, 65</i>	Polk, Jasper	28.5			4		16/54	1
		jct of US 169 to west Mixmaster <i>Freight improvement at location ID 51</i>	Dallas, Polk	12.3			1		32/54	
		jct US 71/US 6 to jct of US 169	Adair, Dallas, Cass, Madison	48.9					33/54	2
		jct of US 59 to jct of US 71/US 6	Cass, Pottawattamie	20.9					47/54	2
		jct of US 6 to jct of US 59 <i>Freight improvement at location ID 12</i>	Pottawattamie	31.5			1		45/54	
		jct of I-29 to jct of US 6	Pottawattamie	5.0					26/54	1
Nebraska border to jct of I-29 <i>Freight improvement at location ID 48</i>	Pottawattamie	3.5				1		4/54		

Contact

Plan update webpage: www.iowadot.gov/iowainmotion

Andrea White

Statewide Planning Coordinator

Office of Systems Planning

andrea.white@dot.iowa.gov

515-239-1210

Garrett Pedersen

Planning Team Leader

Office of Systems Planning

garrett.pedersen@dot.iowa.gov

515-239-1520

