5.3 Highway Needs and Risks Matrix

In order to provide a comprehensive view of all analysis layers for the entire Primary Highway System, a highway needs and risks matrix was developed. Highways are categorized by Interstate, US, and Iowa routes. Table 5.3 provides a key to help explain what is shown on the matrix.

Table 5.3: Key to highway needs and risks matrix (Tables 5.4 – 5.6)

Column heading	Description
Route	The highway being referenced. Duplicate routes are represented once in the analysis and matrix. Generally, they are in the grouping for the highest route classification (Interstates > US Highways > Iowa Highways) or for the lowest highway number if classifications are the same.
Corridor	The termini for the specific analysis corridor. Corridors are shown from west-to-east or south-to-north for each route.
County	The county or counties the corridor travels through, listed west-to-east or south-to-north.
IMFN	IMFN = Iowa Multimodal Freight Network. The cell is gray if the corridor is on the network. "Partial" is noted if only a portion is on the network.
CIN	CIN = Commercial and Industrial Network. The cell is gray if the corridor is on the network. "Partial" is noted if only a portion is on the network.
Pavement Condition	The cell is red if the corridor is the bottom 25% of corridors for ICE composite score.
Bridge Condition	The cell is teal if the corridor has one or more bridge in the bottom 5% of bridges by BCI. The numbers are the ranks out of the 216 bridges in the bottom 5%. Numbers appearing in parentheses mean that the two structures are at the same location (e.g., the eastbound and westbound lanes of an Interstate). Numbers followed by "L" mean the structure is owned and maintained by the Iowa DOT but on a local (county or municipal) route. Bridges with the same BCI have the same ranking, meaning some rankings appear multiple times in the matrix.
Bottlenecks	The cell is green if the corridor has one or more bottleneck identified. The numbers are the ranks out of the 114 bottlenecks.
Super-2	The cell is orange if the corridor is on a targeted mobility and safety (Super-2) route. A note of "4LC" means that particular corridor is a 4-lane corridor and would not be targeted for Super-2 improvements.
Capacity	The cell is yellow if the corridor has been identified as a capacity need. "Partial" is noted if only a portion of the corridor was identified as a need.
Safety	The cell is red if the corridor has been identified as a corridor to target for safety improvements, meaning it had a potential for crash reduction (PCR) of at least one crash per mile.
Operations	The cell is teal if the corridor has been identified as a corridor to target for operations improvements, meaning it is one or more standard deviation below the statewide average composite score based on the ICE-OPS tool.
Flood Resiliency	The cell is green if the corridor has been identified as a corridor to target for flood resiliency improvements, meaning it is one or more standard deviation below the statewide average composite score based on the flood resiliency analysis.
Bicyclists	The cell has a percentage in it if the corridor was included in the systemic analysis; the percentage indicates the percent of the corridor that is one or more standard deviation below the statewide average composite score for bicyclists. The orange data bars are proportional to the percentages. "N/A" means the corridor was partially or fully excluded from the analysis (typically Interstates and minimum-speed facilities).
Pedestrians	The cell has a percentage in it if the corridor was included in the systemic analysis; the percentage indicates the percent of the corridor that is one or more standard deviation below the statewide average composite score for pedestrians. The yellow data bars are proportional to the percentages. "N/A" means the corridor was partially or fully excluded from the analysis (typically Interstates and minimum-speed facilities).

Table 5.4: Highway needs and risks matrix, Interstates
(section 1 of 2)

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Needs: Pavement Condition	Needs: Bridge Condition	Needs: Bottlenecks	Needs: Super-2	Needs: Capacity	Risks: Safety	Risks: Operations	Risks: Flood Resiliency	Risks: Bicyclists	Risks: Pedestrians	
I-29	MO border to IA 2	Fremont											N/A	N/A	
	IA 2 to US 34	Fremont, Mills											N/A	N/A	
	US 34 to I-80	Mills, Pottawattamie											N/A	N/A	
	I-80 to I-480/US 6	Pottawattamie											N/A	N/A	
	I-480/US 6 to I-680	Pottawattamie					211						N/A	N/A	
	I-680 to I-880	Pottawattamie					21L						N/A	N/A	
	I-880 to IA 175	Pottawattamie, Harrison, Monona					14L, 94, (60, 136)						N/A	N/A	
	IA 175 to US 20/I-129	Monona, Woodbury					96L, 144L, 149L, 151L, 174L, 176L						N/A	N/A	
	US 20/I-129 to SD border	Woodbury						109					N/A	N/A	
I-35	MO border to US 34	Decatur, Clarke											N/A	N/A	
	US 34 to IA 92	Clarke, Warren					66L, 70L, 100, 211						N/A	N/A	
	IA 92 to IA 5	Warren, Polk					7L, 68L						N/A	N/A	
	IA 5 to W mixmaster	Polk							Partial				N/A	N/A	
	E mixmaster to IA 160	Polk											N/A	N/A	
	IA 160 to US 30	Polk, Story											N/A	N/A	
	US 30 to US 20	Story, Hamilton							Partial				N/A	N/A	
	US 20 to IA 3	Hamilton, Wright, Franklin											N/A	N/A	
	IA 3 to US 18	Franklin, Cerro Gordo											N/A	N/A	
	US 18 to MN border	Cerro Gordo, Worth											N/A	N/A	
I-74	IL border to I-80	Scott						110					N/A	N/A	

Table 5.4: Highway needs and risks matrix, Interstates *(section 2 of 2)*

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Needs: Pavement Condition	Needs: Bridge Condition	Needs: Bottlenecks	Needs: Super-2	Needs: Capacity	Risks: Safety	Risks: Operations	Risks: Flood Resiliency	Risks: Bicyclists	Risks: Pedestrians		
I-80	NE border to E jct I-29	Pottawattamie													N/A	N/A
	E jct I-29 to US 6	Pottawattamie				55	99								N/A	N/A
	US 6 to US 59	Pottawattamie					99								N/A	N/A
	US 59 to US 6/US 71	Pottawattamie, Cass				55, 96, 104									N/A	N/A
	US 6/US 71 to US 169	Cass, Adair, Madison, Dallas				81, 116, 171L, 182, 211L			Partial						N/A	N/A
	US 169 to W mixmaster	Dallas, Polk				167L									N/A	N/A
	W mixmaster to US 6	Polk													N/A	N/A
	US 6 to IA 141	Polk													N/A	N/A
	IA 141 to IA 28	Polk					68								N/A	N/A
	IA 28 to IA 415	Polk					68, 89								N/A	N/A
	IA 415 to E mixmaster	Polk					89								N/A	N/A
	E mixmaster to IA 14	Polk, Jasper				(81, 191), 81L, 108L, 154L, 188L, 199L									N/A	N/A
	IA 14 to US 63	Jasper, Poweshiek													N/A	N/A
	US 63 to US 151	Poweshiek, Iowa				52L									N/A	N/A
	US 151 to I-380	Iowa, Johnson													N/A	N/A
	I-380 to IA 1	Johnson				93L									N/A	N/A
	IA 1 to US 6	Johnson, Cedar				90L, 179L									N/A	N/A
	US 6 to I-280	Cedar, Scott				47L, 159L, 191L									N/A	N/A
	I-280 to I-74	Scott				52L, 75L, 92L									N/A	N/A
	I-74 to IL border	Scott				45, 80L, 118L									N/A	N/A
I-129	NE border to I-29	Woodbury				120									N/A	N/A
I-235	W mixmaster to IA 28	Polk													N/A	N/A
	IA 28 to US 69	Polk													N/A	N/A
	US 69 to E mixmaster	Polk													N/A	N/A
I-280	IL border to US 61/IA 146	Scott													N/A	N/A
	US 61/IA 146 to I-80	Scott				33, 39, 68									N/A	N/A
I-380	I-80 to US 30	Johnson, Linn													N/A	N/A
	US 30 to IA 100	Linn				120, 147									N/A	N/A
	IA 100 to IA 150	Linn, Benton													N/A	N/A
	IA 150 to E jct US 20	Benton, Buchanan, Black Hawk													N/A	N/A
	E jct US 20 to Mitchell Ave	Black Hawk													N/A	N/A
I-480	NE border to I-29	Pottawattamie				8, 154									N/A	N/A
I-680	NE border to I-29	Pottawattamie				199									N/A	N/A
I-880	I-29 to I-80	Pottawattamie				179									N/A	N/A

Table 5.5: Highway needs and risks matrix, US routes
(section 1 of 6)

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Needs: Pavement Condition	Needs: Bridge Condition	Needs: Bottlenecks	Needs: Super-2	Needs: Capacity	Needs: Safety	Risks: Operations	Risks: Flood Resiliency	Risks: Bicyclists	Risks: Pedestrians		
US 6	I-80 to US 59	Pottawattamie						99							0.0%	5.9%
	US 59 to US 71	Pottawattamie, Cass													7.8%	7.8%
	US 169 to I-35/80	Dallas, Polk						20, 46		Partial					1.9%	1.9%
	I-35/80 to IA 28	Polk		Partial				1, 11, 37, 102							35.1%	56.9%
	IA 28 to US 69	Polk						15, 37, 43							98.1%	98.1%
	US 69 to I-235	Polk													99.7%	99.7%
	I-235 to I-80	Polk						75, 78							25.6%	39.6%
	I-80 to IA 146	Jasper, Poweshiek						36							9.8%	10.1%
	IA 146 to US 151	Poweshiek, Iowa					111	36							6.7%	4.1%
	US 151 to IA 965	Iowa, Johnson						81		Partial					0.1%	0.1%
	IA 965 to IA 1	Johnson						2, 30, 81							49.3%	56.8%
	IA 1 to IA 70	Johnson, Muscatine		Partial			75	26, 30		Partial					8.8%	7.5%
	IA 70 to IA 38	Muscatine					132								0.1%	0.1%
	IA 38 to I-80	Muscatine, Cedar					147								2.7%	1.5%
	I-280 to IA 461	Scott					191	73							32.9%	34.1%
	IA 461 to I-74	Scott						73							0.8%	2.6%
US 18	SD border to US 75	Lyon, Sioux						101							1.5%	2.4%
	US 75 to IA 60	Sioux, O'Brien						101							4.6%	9.8%
	IA 60 to US 71	O'Brien, Clay					62, 211								4.6%	38.7%
	US 71 to US 169	Clay, Palo Alto, Kossuth					32, 130, 201								6.8%	23.8%
	US 169 to I-35	Kossuth, Hancock, Cerro Gordo													0.2%	3.5%
	I-35 to US 65	Cerro Gordo							4LC						N/A	N/A
	US 65 to US 218	Cerro Gordo, Floyd							4LC						0.3%	53.7%
	US 218 to US 63	Floyd, Chickasaw													11.9%	7.2%
	US 63 to IA 150	Chickasaw, Fayette													1.4%	31.5%
	IA 150 to US 52	Fayette, Clayton, Allamakee													3.2%	3.2%
	US 52 to IA 76	Allamakee, Clayton						27, 85							0.3%	2.9%

Table 5.5: Highway needs and risks matrix, US routes
(section 2 of 6)

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Pavement Condition	Bridge Condition	Bottlenecks	Super-2	Capacity	Safety	Operations	Flood Resiliency	Bicyclists	Pedestrians		
			Needs							Risks						
US 20	I-29 to US 75	Woodbury													N/A	N/A
	US 75 to IA 140	Woodbury													0.0%	63.8%
	IA 140 to US 59	Ida, Woodbury													0.1%	34.0%
	US 59 to US 71	Ida, Sac													0.0%	73.4%
	US 71 to US 169	Sac, Calhoun, Webster													0.0%	77.2%
	US 169 to I-35	Webster, Hamilton													N/A	N/A
	I-35 to US 65	Hamilton, Hardin													N/A	N/A
	US 65 to IA 14	Hardin, Grundy													N/A	N/A
	IA 14 to IA 27	Grundy, Black Hawk													N/A	N/A
	IA 27 to US 218	Black Hawk													N/A	N/A
	I-380 to IA 150	Black Hawk, Buchanan													N/A	N/A
	IA 150 to IA 13	Buchanan, Delaware													N/A	N/A
	IA 13 to IA 136	Delaware, Dubuque													N/A	N/A
	IA 136 to Northwest Arterial	Dubuque						90		Partial					5.3%	8.6%
	Northwest Arterial to IL border	Dubuque					13, 104	70, 84, 90							10.4%	12.1%
US 30	NE border to I-29	Harrison					25, 67, 125								8.1%	1.8%
	I-29 to US 59	Harrison, Crawford					10, 114, 169	52							5.1%	1.6%
	US 59 to US 71	Crawford, Carroll						61							3.2%	4.3%
	US 71 to US 169	Carroll, Greene, Boone					36, 72, 89	61							9.6%	3.8%
	US 169 to IA 930	Boone					(133, 165)	57	4LC						0.9%	0.4%
	IA 930 to I-35	Boone, Story					(176, 184)		4LC						0.4%	0.0%
	I-35 to IA 14	Story, Marshall						95	4LC						0.1%	5.2%
	IA 14 to 3.3 mi E of US 63	Marshall, Tama						95	4LC						0.1%	5.2%
	3.3 mi E of US 63 to US 218	Tama, Benton					11		4LC						0.0%	0.0%
	US 218 to IA 922	Benton, Linn							4LC						N/A	N/A
	IA 922 to I-380	Linn							4LC						N/A	N/A
	I-380 to 5.2 mi E of IA 1	Linn, Cedar	Partial				45		4LC						N/A	N/A
	5.2 mi E of IA 1 to US 61	Cedar, Clinton					15, 122, 171								0.8%	1.6%
	US 61 to IL border	Clinton					4	105	4LC						2.8%	3.5%

Table 5.5: Highway needs and risks matrix, US routes
(section 3 of 6)

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Needs: Pavement Condition	Needs: Bridge Condition	Needs: Bottlenecks	Needs: Super-2	Needs: Capacity	Needs: Safety	Risks: Operations	Risks: Flood Resiliency	Risks: Bicyclists	Risks: Pedestrians		
US 34	NE border to I-29	Mills							4LC						0.0%	52.3%
	I-29 to 0.8 mi W of US 275	Mills						41	4LC						0.0%	86.6%
	0.8 mi W of US 275 to US 59	Mills					15								0.0%	27.6%
	US 59 to US 71	Mills, Montgomery					184, 206, 206	63							2.7%	18.6%
	US 71 to IA 25	Montgomery, Adams, Union					77								2.3%	2.9%
	IA 25 to I-35	Union, Clarke					100								3.8%	18.3%
	I-35 to US 65	Clarke, Lucas													6.9%	7.1%
	US 65 to IA 5	Lucas, Monroe					38, 81, 159	62							1.5%	4.5%
	IA 5 to Ottumwa W CL	Monroe, Wapello					59, 139	62							0.1%	37.7%
	Ottumwa W CL to US 63	Wapello						44	4LC						26.7%	10.8%
	US 63 to IA 1	Wapello, Jefferson							4LC						1.0%	16.1%
	IA 1 to US 218	Jefferson, Henry					22		4LC						0.0%	11.7%
	US 218 to US 61	Henry, Des Moines							4LC						0.7%	4.6%
	US 61 to IL border	Des Moines							4LC						0.0%	0.3%
US 52	IL border to US 61	Jackson, Dubuque						9							43.0%	0.9%
	Jct US 52/61/151 to US 20*	Dubuque														
	US 20 to IA 3/IA 136	Dubuque						48							6.5%	0.8%
	IA 3/IA 136 to E jct US 18	Dubuque, Clayton						48, 85							9.0%	4.9%
	W jct US 18 to IA 9	Allamakee, Winneshiek						8							2.7%	0.3%
	IA 9 to MN border	Winneshiek					159								0.0%	0.0%
US 59	MO border to IA 2	Fremont, Page													0.0%	0.0%
	IA 2 to US 34	Fremont, Page, Mills					27								7.9%	4.9%
	US 34 to I-80	Mills, Pottawattamie					79, 96, 104, 154, 159, (174, 206)								3.7%	4.2%
	I-80 to US 30	Pottawattamie, Shelby, Crawford					77, 129, (174, 206)								0.0%	0.0%
	US 30 to US 20	Crawford, Ida						82							3.5%	2.1%
	US 20 to IA 3	Ida, Cherokee													11.6%	15.3%
	IA 3 to US 18	Cherokee, O'Brien													22.0%	1.3%
	US 18 to MN border	O'Brien, Osceola													0.0%	0.0%

**Due to its recent construction, data was not available to analyze for this corridor.*

Table 5.5: Highway needs and risks matrix, US routes
(section 4 of 6)

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Needs: Pavement Condition	Needs: Bridge Condition	Needs: Bottlenecks	Needs: Super-2	Needs: Capacity	Risks: Safety	Risks: Operations	Risks: Flood Resiliency	Risks: Bicyclists	Risks: Pedestrians		
US 61	MO border to US 218	Lee					40, 71								2.0%	51.8%
	US 218 to IA 2	Lee					71								0.0%	86.5%
	IA 2 to Burlington N CL	Lee, Des Moines					60								0.2%	84.3%
	Burlington N CL to IA 92	Des Moines, Louisa				72, 191									0.8%	0.8%
	IA 92 to IA 38	Louisa, Muscatine					4, 29, 55								0.0%	22.4%
	IA 38 to I-280	Muscatine, Scott					55								3.1%	64.4%
	I-80 to US 30	Scott, Clinton				124			Partial						N/A	N/A
	US 30 to IA 64	Clinton, Jackson													N/A	N/A
	IA 64 to US 151	Jackson, Dubuque				149, 182									0.0%	74.4%
	US 151 to US 20	Dubuque					9								10.5%	6.9%
	US 20 to WI border	Dubuque				201			Partial						11.6%	11.6%
US 63	MO border to US 34	Davis, Wapello				23, 24, 60, 100, 104, 151		4LC							2.6%	1.6%
	US 34 to IA 149	Wapello						4LC							0.2%	0.2%
	IA 149 to IA 92	Wapello, Mahaska	Partial			81		4LC							3.5%	6.0%
	IA 92 to I-80	Mahaska, Poweshiek													6.3%	5.6%
	I-80 to US 30	Poweshiek, Tama													6.2%	5.8%
	US 30 to US 20	Tama, Black Hawk					74								4.3%	4.8%
	US 20 to US 218	Black Hawk						4LC							7.8%	12.2%
	US 218 to Waterloo N CL	Black Hawk						4LC							72.1%	68.4%
	Waterloo N CL to IA 3	Black Hawk, Bremer						4LC							1.5%	0.0%
	IA 3 to US 18	Bremer, Chickasaw						4LC							0.2%	5.8%
	US 18 to MN border	Chickasaw, Howard													0.6%	6.0%
US 65	MO border to US 34	Wayne, Lucas				50, 140									0.0%	0.0%
	US 34 to IA 92	Lucas, Warren				211			Partial						2.3%	2.3%
	IA 92 to IA 5	Warren													5.3%	42.9%
	IA 5 to IA 163	Warren, Polk													11.6%	7.9%
	IA 163 to I-80	Polk													0.3%	57.7%
	I-80 to IA 330	Polk, Jasper					33, 56								0.0%	55.6%
	IA 330 to US 30	Jasper, Story													0.0%	1.0%
	US 30 to US 20	Story, Hardin													0.0%	0.0%
	US 20 to IA 3	Hardin, Franklin					112								12.6%	5.6%
	IA 3 to US 18	Franklin, Cerro Gordo				116									6.9%	5.0%
	US 18 to Mason City N CL	Cerro Gordo					96								21.2%	22.1%
	Mason City N CL to MN border	Cerro Gordo, Worth													3.5%	0.0%

Table 5.5: Highway needs and risks matrix, US routes
(section 5 of 6)

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Needs: Pavement Condition	Needs: Bridge Condition	Needs: Bottlenecks	Needs: Super-2	Needs: Capacity	Needs: Safety	Risks: Operations	Risks: Flood Resiliency	Risks: Bicyclists	Risks: Pedestrians	
US 67	IL border to I-74	Scott				2, 136L	93, 107, 110						58.9%	58.9%	
	I-74 to I-80	Scott		Partial			110						30.8%	14.6%	
	I-80 to US 30	Scott, Clinton											7.1%	4.3%	
	US 30 to Clinton N CL	Clinton					98, 105						33.7%	33.7%	
	Clinton N CL to US 52	Clinton, Jackson											0.0%	0.0%	
US 69	MO border to US 34	Decatur, Clarke				18							4.1%	0.3%	
	US 34 to US 65	Clarke, Warren											36.6%	0.6%	
	IA 5 to I-235	Warren, Polk				42, 48	6, 25, 91						19.1%	64.9%	
	I-235 to I-35/80	Polk					31						91.6%	85.6%	
	I-35/80 to Ankeny N CL	Polk					3, 38						41.6%	22.0%	
	Ankeny N CL to US 30	Polk, Story							Partial				1.9%	4.5%	
	US 30 to Ames N CL	Story				110L	114						61.1%	66.2%	
	Ames N CL to US 20	Story, Hamilton					86		Partial				0.3%	20.8%	
	US 20 to IA 3	Hamilton, Wright											0.5%	0.0%	
	IA 3 to US 18	Wright, Hancock				133, 184							44.1%	3.2%	
	US 18 to MN border	Hancock, Winnebago, Worth											2.2%	2.1%	
US 71	MO border to US 34	Page, Montgomery											0.0%	0.0%	
	US 34 to I-80	Montgomery, Cass				96							8.9%	1.7%	
	I-80 to US 30	Cass, Audubon, Carroll					61						0.0%	0.5%	
	US 30 to US 20	Carroll, Sac					32, 61						0.0%	0.9%	
	US 20 to IA 3	Sac, Buena Vista											13.5%	0.3%	
	IA 3 to US 18	Buena Vista, Clay				206							2.1%	3.8%	
	US 18 to IA 86	Clay, Dickinson					87	4LC					4.3%	4.3%	
	IA 86 to MN border	Dickinson					22, 87						29.2%	26.1%	
US 75	US 20 to IA 60	Woodbury, Plymouth				30, 57, 64, 74, 188							N/A	N/A	
	IA 60 to US 18	Plymouth, Sioux					101						8.8%	8.4%	
	US 18 to MN border	Sioux, Lyon											0.0%	0.0%	
US 77	NE border to I-29	Woodbury					109						45.1%	84.5%	
US 136	US 61 to IL border	Lee				81, 201	40, 113						39.8%	54.8%	
US 151	I-80 to US 30	Iowa, Benton, Linn					83		Partial				10.0%	6.9%	
	US 30 to IA 13	Linn					10, 19, 76		Partial				1.6%	18.4%	
	IA 13 to US 61	Linn, Jones, Dubuque					76						0.1%	32.0%	

Table 5.5: Highway needs and risks matrix,
US routes
(section 6 of 6)

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Needs: Pavement Condition	Needs: Bridge Condition	Needs: Bottlenecks	Needs: Super-2	Needs: Capacity	Risks: Safety	Risks: Operations	Risks: Flood Resiliency	Risks: Bicyclists	Risks: Pedestrians		
US 169	MO border to US 34	Ringgold, Union													1.3%	0.0%
	US 34 to IA 92	Union, Madison													0.0%	0.0%
	IA 92 to I-80	Madison, Dallas					211								0.0%	0.0%
	I-80 to IA 141	Dallas													1.8%	1.1%
	IA 141 to US 30	Dallas, Boone													0.9%	0.0%
	US 30 to US 20	Boone, Webster													1.1%	0.4%
	US 20 to IA 3	Webster, Humboldt						65, 67							1.8%	0.3%
	IA 3 to US 18	Humboldt, Kossuth													9.6%	6.7%
	US 18 to MN border	Kossuth					52								1.6%	0.0%
US 218	US 136 to IA 27	Lee						71, 113							12.1%	12.2%
	IA 27 to US 34	Lee, Henry													0.1%	27.2%
	US 34 to IA 92	Henry, Washington													0.0%	10.5%
	IA 92 to IA 1	Washington, Johnson						103							N/A	N/A
	IA 1 to I-80	Johnson						103							N/A	N/A
	US 30 to IA 150	Benton													0.1%	0.0%
	IA 150 to S jct I-380	Benton, Black Hawk					151	92							4.2%	1.1%
	Mitchell Ave to IA 27	Black Hawk								Partial					2.6%	6.7%
	IA 27 to IA 3	Black Hawk, Bremer													0.5%	0.0%
	IA 3 to US 18	Bremer, Chickasaw, Floyd													0.0%	0.5%
	US 18 to MN border	Floyd, Mitchell													4.5%	2.0%
US 275	MO border to US 34	Fremont, Mills													25.1%	0.0%
	I-29 to NE border	Pottawattamie						14							13.2%	4.3%

Table 5.6: Highway needs and risks matrix,
IA routes
(section 1 of 7)

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Pavement Condition	Bridge Condition	Bottlenecks	Super-2	Capacity	Safety	Operations	Flood Resiliency	Bicyclists	Pedestrians		
			Needs								Risks					
IA 1	IA 2 to US 34	Van Buren, Jefferson				176, 206									1.5%	0.0%
	US 34 to IA 92	Jefferson, Keokuk, Washington					100								3.1%	2.4%
	IA 92 to Iowa City S CL	Washington, Johnson					47								0.0%	0.8%
	Iowa City S CL to US 6	Johnson					26, 103		Partial						19.3%	21.5%
	US 6 to I-80	Johnson					30, 104, 111		Partial						9.6%	9.7%
	I-80 to US 30	Johnson, Linn							Partial						3.3%	1.1%
	US 30 to US 151	Linn, Jones													6.7%	6.3%
IA 2	NE border to I-29	Fremont													15.2%	29.9%
	I-29 to US 59	Fremont				122, 154, 159									31.3%	2.1%
	US 59 to US 71	Fremont, Page													0.0%	12.7%
	US 71 to US 169	Page, Taylor, Ringgold													0.0%	0.0%
	US 169 to I-35	Ringgold, Decatur													0.5%	0.0%
	I-35 to US 65	Decatur, Wayne													2.7%	0.0%
	US 65 to IA 5	Wayne, Appanoose													9.4%	4.5%
	IA 5 to US 63	Appanoose, Davis													15.5%	0.0%
	US 63 to US 218	Davis, Van Buren, Lee													3.7%	0.7%
	US 218 to US 61	Lee													5.0%	0.0%
IA 3	NE border to US 75	Plymouth													0.2%	3.9%
	US 75 to US 59	Plymouth, Cherokee					100								26.1%	2.5%
	US 59 to US 71	Cherokee, Buena Vista					125								2.3%	0.0%
	US 71 to US 169	Buena Vista, Pocahontas, Humboldt													3.3%	2.0%
	US 169 to I-35	Humboldt, Wright, Franklin													5.5%	5.5%
	I-35 to US 65	Franklin													10.7%	10.7%
	US 65 to US 218	Franklin, Butler, Bremer					159								2.8%	0.7%
	US 218 to US 63	Bremer					12								12.8%	12.8%
	US 63 to IA 150	Bremer, Fayette													0.0%	0.0%
	IA 150 to IA 13	Fayette, Clayton													8.2%	6.0%
	IA 13 to IA 136	Clayton, Delaware, Dubuque						48							0.0%	0.0%
	IA 136 to Northwest Arterial	Dubuque						48, 51							43.7%	0.0%

Table 5.6: Highway needs and risks matrix, IA routes
(section 2 of 7)

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Pavement Condition	Bridge Condition	Bottlenecks	Super-2	Capacity	Safety	Operations	Flood Resiliency	Bicyclists	Pedestrians		
			Needs									Risks				
IA 4	IA 44 to IA 141	Guthrie						18							0.0%	0.0%
	IA 141 to US 30	Guthrie, Greene													12.6%	12.6%
	US 30 to US 20	Greene, Calhoun													9.1%	0.0%
	US 20 to IA 3	Calhoun, Pocahontas													4.5%	0.1%
	IA 3 to US 18	Pocahontas, Palo Alto			■										3.2%	1.7%
	US 18 to IA 9	Palo Alto, Emmet													19.3%	2.8%
	IA 9 to MN border	Emmet			■										5.8%	5.8%
IA 5	MO border to IA 2	Appanoose				35, 111									9.8%	9.3%
	IA 2 to US 34	Appanoose, Monroe			■	36, 154	62								6.3%	5.6%
	US 34 to E jct IA 92	Monroe, Marion			■		62								3.5%	1.2%
	E jct IA 92 to W jct IA 92	Marion					80								2.5%	32.2%
	W jct IA 92 to US 65	Marion, Warren, Polk				125	80						■		7.9%	39.2%
	US 65 to IA 28	Warren, Polk													N/A	N/A
	IA 28 to I-35	Polk													N/A	N/A
IA 7	IA 3 to US 71	Cherokee, Buena Vista					69								10.6%	12.2%
	US 71 to US 169	Buena Vista, Pocahontas, Calhoun, Webster				165, 184	65								2.1%	0.0%
IA 8	US 63 to US 218	Tama, Benton											■		0.0%	0.0%
IA 9	SD border to IA 60	Lyon, Osceola													3.9%	2.1%
	IA 60 to US 71	Osceola, Dickinson				62	22, 97								2.4%	1.3%
	US 71 to US 169	Dickinson, Emmet, Kossuth													4.0%	4.5%
	US 169 to I-35	Kossuth, Winnebago, Worth				179									2.8%	1.0%
	I-35 to US 63	Worth, Mitchell, Howard													2.3%	0.4%
	US 63 to Decorah E CL	Howard, Winneshiek				27									6.5%	5.1%
	Decorah E CL to IL border	Winneshiek, Allamakee				3									5.7%	3.5%
IA 10	NE border to IA 60	Sioux			■										2.5%	2.5%
	IA 60 to US 71	Sioux, O'Brien, Clay													1.3%	0.6%
	US 71 to IA 4	Buena Vista, Pocahontas			■										0.0%	0.0%
IA 12	US 20/US 75 to I-29	Woodbury			■	1						■			38.2%	90.7%
	I-29 to Sioux City N CL	Woodbury			■										31.5%	31.5%
	Sioux City N CL to IA 10	Woodbury, Plymouth, Sioux			■										1.1%	0.0%
IA 13	US 151 to E16	Linn					76								1.7%	1.6%
	E16 to US 20	Linn, Delaware			■										0.0%	4.3%
	US 20 to IA 3	Delaware			■										8.8%	6.8%
	IA 3 to US 52	Clayton													2.0%	0.0%

Table 5.6: Highway needs and risks matrix, IA routes
(section 3 of 7)

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Pavement Condition	Bridge Condition	Bottlenecks	Super-2	Capacity	Safety	Operations	Flood Resiliency	Bicyclists	Pedestrians
IA 14	IA 2 to US 34	Wayne, Lucas											2.5%	2.5%
	US 34 to IA 5	Lucas, Marion											3.8%	3.6%
	IA 5 to IA 163	Marion, Jasper					26, 70, 114, 133						12.1%	12.1%
	IA 163 to I-80	Jasper											2.5%	10.3%
	US 6 to US 30	Jasper, Marshall					94	95					2.3%	1.4%
	US 30 to US 20	Marshall, Grundy		Partial			125	95					15.6%	15.5%
	US 20 to IA 3	Grundy, Butler											4.9%	0.0%
	IA 3 to US 18	Butler, Floyd											3.8%	2.5%
IA 15	IA 3 to US 18	Pocahontas, Humboldt, Kossuth											0.0%	0.0%
	US 18 to MN border	Kossuth, Emmet											0.0%	0.0%
IA 16	US 34 to US 218	Wapello, Davis, Van Buren, Lee											0.3%	0.0%
	US 218 to US 61	Lee											1.7%	0.0%
IA 17	IA 141 to US 30	Polk, Boone											6.2%	2.5%
	US 30 to US 20	Boone, Hamilton											3.4%	0.0%
	US 20 to IA 3	Hamilton, Wright											7.9%	4.3%
	IA 3 to US 18	Wright, Hancock											2.8%	0.0%
IA 21	IA 78 to IA 92	Keokuk											0.0%	0.0%
	IA 92 to I-80	Keokuk, Poweshiek											4.3%	0.2%
	I-80 to US 30	Poweshiek, Iowa, Benton											10.2%	5.5%
	US 30 to US 20	Benton, Tama, Black Hawk											1.8%	0.4%
IA 22	IA 21 to IA 1	Keokuk, Washington						47					7.5%	0.0%
	IA 1 to US 218	Washington						47					10.5%	6.4%
	US 218 to IA 70	Washington, Johnson, Muscatine											4.4%	0.0%
	IA 70 to US 61	Muscatine						4					2.8%	0.0%
	IA 38 to Buffalo E CL	Muscatine, Scott											6.5%	1.0%
	Buffalo E CL to IA 461	Scott											0.9%	0.0%
IA 23	IA 149 to IA 92	Keokuk, Mahaska					9						74.3%	0.1%
IA 24	US 63 to US 52	Chickasaw, Winneshiek						8					6.3%	3.6%
IA 25	IA 2 to US 34	Ringgold, Union											0.0%	0.0%
	US 34 to I-80	Union, Adair											32.5%	4.7%
	I-80 to US 30	Adair, Guthrie, Greene						108					1.3%	0.0%
IA 26	IA 9 to MN border	Allamakee											0.3%	0.3%
IA 27	MO border to US 218	Lee											0.0%	78.8%
	US 20 to US 218	Black Hawk								Partial			0.2%	0.5%

Table 5.6: Highway needs and risks matrix, IA routes
(section 4 of 7)

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Pavement Condition	Bridge Condition	Bottlenecks	Super-2	Capacity	Safety	Operations	Flood Resiliency	Bicyclists	Pedestrians		
			Needs								Risks					
IA 28	IA 92 to Norwalk S CL	Warren						45						0.9%	0.0%	
	Norwalk S CL to IA 5	Warren, Polk						53						14.1%	30.6%	
	IA 5 to I-235	Polk					41	12, 35, 59		Partial				30.0%	30.0%	
	I-235 to US 6	Polk						102						98.6%	99.0%	
	US 6 to I-35/80	Polk						37, 68						49.0%	84.8%	
IA 31	IA 141 to US 20	Woodbury												1.0%	0.0%	
	US 20 to US 59	Woodbury, Ida, Cherokee												0.0%	0.0%	
IA 37	IA 175 to US 30	Monona, Crawford, Harrison												0.0%	0.0%	
	US 30 to US 59	Harrison, Shelby												0.0%	0.0%	
IA 38	US 61 to US 6	Muscatine						55						0.0%	0.1%	
	I-80 to US 30	Cedar					19							4.6%	4.3%	
	US 30 to US 151	Cedar, Jones						79						0.0%	0.0%	
	US 151 to US 20	Jones, Delaware												9.6%	4.4%	
	US 20 to IA 3	Delaware												3.7%	0.0%	
IA 39	US 59 to IA 175	Crawford, Sac					140	34, 82						8.6%	0.2%	
IA 44	US 30 to US 59	Harrison, Shelby												0.0%	0.0%	
	US 59 to US 71	Shelby, Audubon												5.6%	5.1%	
	US 71 to US 169	Audubon, Guthrie, Dallas						18, 108						1.4%	1.4%	
	US 169 to IA 141	Dallas, Polk								Partial				16.6%	20.2%	
IA 48	US 59 to US 34	Page, Montgomery						63						8.8%	5.7%	
	US 34 to US 6	Montgomery, Cass						63						2.6%	1.1%	
IA 51	US 18 to IA 9	Allamakee						27						0.3%	2.1%	
IA 56	IA 150 to IA 13	Fayette, Clayton												1.7%	0.0%	
IA 57	US 65 to Cedar Falls W CL	Hardin, Butler, Grundy, Black Hawk					140							12.3%	0.0%	
	Cedar Falls W CL to US 218	Black Hawk						94						33.5%	33.5%	
IA 58	US 63 to US 20	Black Hawk												0.0%	0.4%	
IA 60	US 75 to US 18	Plymouth, Sioux, O'Brien						64						0.1%	10.1%	
	US 18 to MN border	O'Brien, Osceola												0.0%	6.0%	
IA 62	IA 64 to US 52	Jackson												0.4%	0.4%	
IA 64	US 151 to US 61	Jones, Jackson						54, 79						2.8%	0.0%	
	US 61 to US 67	Jackson												4.7%	4.5%	
IA 70	IA 92 to IA 22	Louisa, Muscatine												17.4%	0.0%	
	IA 22 to US 6	Muscatine												6.5%	4.6%	
IA 76	W jct US 18 to S jct IA 9	Clayton, Allamakee												21.7%	0.9%	
	N jct IA 9 to MN border	Allamakee												0.0%	0.0%	

Table 5.6: Highway needs and risks matrix, IA routes
(section 5 of 7)

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Needs: Pavement Condition	Needs: Bridge Condition	Needs: Bottlenecks	Needs: Super-2	Needs: Capacity	Needs: Safety	Risks: Operations	Risks: Flood Resiliency	Risks: Bicyclists	Risks: Pedestrians	
IA 78	IA 149 to IA 1	Keokuk				5, 81, 108								3.9%	0.0%
	IA 1 to US 218	Washington, Jefferson, Henry												9.0%	0.0%
	US 218 to US 61	Henry, Louisa				48, 144								0.0%	0.0%
IA 81	MO border to IA 2	Van Buren												0.0%	0.0%
IA 83	US 59 to IA 148	Pottawattamie, Cass				64, 118								6.1%	1.8%
IA 85	Montezuma E CL to IA 21	Poweshiek												0.0%	0.0%
IA 86	US 71 to IA 9	Dickinson					87, 97							0.0%	0.0%
	IA 9 to MN border	Dickinson					97							0.0%	0.0%
IA 92	I-29 to US 59	Pottawattamie					50		Partial					13.6%	10.7%
	US 59 to US 71	Pottawattamie, Cass				88								0.0%	0.0%
	US 71 to US 169	Cass, Adair, Madison												0.0%	0.0%
	US 169 to I-35	Madison, Warren												2.0%	0.0%
	I-35 to US 65	Warren				33	45							8.2%	7.4%
	US 65 to IA 5	Warren, Marion					80							5.4%	3.5%
	IA 5 to US 63	Marion, Mahaska												3.6%	59.2%
	US 63 to IA 1	Mahaska, Keokuk, Washington				29, 42	77							3.4%	2.5%
	IA 1 to US 218	Washington												8.0%	10.0%
	US 218 to US 61	Washington, Louisa												1.8%	3.1%
	US 61 to IL border	Muscatine				191	55							89.1%	44.2%
IA 93	US 63 to IA 150	Bremer, Fayette												2.1%	1.3%
IA 96	IA 14 to US 63	Marshall, Tama												1.0%	0.0%
IA 100	US 30 to I-380	Linn							Partial					N/A	N/A
	I-380 to US 151	Linn					16, 19		Partial					19.4%	19.4%
IA 110	US 20 to IA 7	Sac, Buena Vista												2.7%	0.1%
IA 116	US 218 to IA 3	Bremer												14.8%	16.4%
IA 117	IA 163 to I-80	Jasper				191								11.6%	4.2%
	I-80 to US 65	Jasper				191								4.1%	0.0%
IA 122	I-35 to Mason City W CL	Cerro Gordo												3.9%	0.0%
	Mason City W CL to Mason City E CL	Cerro Gordo					96							33.3%	33.7%
IA 127	I-29 to US 30	Harrison					52							1.0%	0.0%
IA 128	IA 13 to US 52	Clayton												6.5%	0.0%
IA 130	IA 38 to I-80	Cedar, Scott												11.5%	1.9%
IA 136	IL border to US 67	Clinton				17	98							81.4%	81.4%
	US 67 to US 61	Clinton												8.3%	0.7%
	US 61 to US 151	Clinton, Jones, Dubuque					54							1.3%	0.8%
	US 151 to US 20	Dubuque												17.1%	0.1%

Table 5.6: Highway needs and risks matrix, IA routes
(section 6 of 7)

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Pavement Condition	Bridge Condition	Bottlenecks	Super-2	Capacity	Safety	Operations	Flood Resiliency	Bicyclists	Pedestrians		
			Needs								Risks					
IA 137	IA 5 to US 63	Monroe, Wapello													10.0%	0.1%
IA 139	IA 9 to MN border	Winneshiek													0.0%	0.0%
IA 140	US 20 to IA 3	Woodbury, Plymouth													1.5%	0.0%
IA 141	I-29 to US 59	Woodbury, Monona, Crawford					201, 201	49, 106							4.5%	1.6%
	US 59 to US 71	Crawford, Carroll													2.6%	2.6%
	US 71 to IA 4	Carroll, Guthrie													6.0%	0.0%
	IA 4 to IA 144	Guthrie, Dallas													0.0%	0.0%
	IA 144 to US 169	Dallas						58							7.3%	0.1%
	US 169 to I-35/80	Dallas, Polk						28		Partial					0.5%	0.2%
IA 143	IA 3 to IA 10	Cherokee, O'Brien													1.3%	0.0%
IA 144	IA 141 to US 30	Dallas, Boone, Greene						58							7.2%	6.4%
	US 30 to IA 175	Greene, Webster													2.3%	0.0%
IA 146	US 63 to I-80	Mahaska, Poweshiek													0.0%	0.0%
	I-80 to US 30	Poweshiek, Tama, Marshall						36							6.6%	5.6%
IA 148	MO border to US 34	Taylor, Adams													3.4%	3.4%
	US 34 to I-80	Adams, Cass													3.4%	2.7%
IA 149	US 34 to US 63	Wapello						44, 72							0.0%	11.6%
	US 63 to IA 92	Wapello, Keokuk						77							0.4%	0.1%
	IA 92 to I-80	Keokuk, Iowa													2.2%	0.0%
IA 150	US 218 to I-380	Benton													72.2%	5.0%
	I-380 to US 20	Benton, Buchanan													6.8%	17.2%
	US 20 to IA 3	Buchanan, Fayette													14.9%	13.3%
	IA 3 to US 18	Fayette													4.1%	0.3%
	US 18 to US 52	Fayette, Winneshiek						8							6.2%	0.0%
IA 160	IA 415 to I-35	Polk						13, 38							15.1%	19.0%
IA 163	US 69 to US 65	Polk					(42, 50)	5, 24, 31							50.0%	57.1%
	US 65 to IA 14	Polk, Jasper						17		Partial					0.0%	0.0%
	IA 14 to US 63	Jasper, Marion, Mahaska													0.2%	0.0%
IA 173	IA 83 to IA 44	Cass, Shelby, Audubon													3.4%	0.0%
IA 175	NE border to US 59	Monona, Woodbury, Ida					30, 57, 167, 188	106							3.3%	1.7%
	US 59 to US 71	Ida, Sac						34							5.6%	0.0%
	US 71 to US 169	Sac, Calhoun, Webster						32							15.6%	1.1%
	US 169 to I-35	Webster, Hamilton					130								0.1%	0.1%
	I-35 to IA 14	Hamilton, Hardin, Grundy													3.7%	3.3%
	IA 14 to US 63	Grundy, Black Hawk													8.6%	3.1%

Table 5.6: Highway needs and risks matrix, IA routes
(section 7 of 7)

See Table 5.3 for key

Route	Corridor	County	IMFN Networks	CIN Networks	Needs: Pavement Condition	Needs: Bridge Condition	Needs: Bottlenecks	Needs: Super-2	Needs: Capacity	Risks: Safety	Risks: Operations	Risks: Flood Resiliency	Risks: Bicyclists	Risks: Pedestrians		
IA 182	US 18 to IA 9	Lyon													5.3%	0.0%
IA 183	IA 127 to IA 141	Harrison, Monona													0.0%	0.0%
IA 187	US 20 to IA 3	Buchanan, Fayette													60.9%	0.0%
	IA 3 to IA 150	Fayette													0.0%	0.0%
IA 188	IA 3 to US 218	Butler, Bremer													0.0%	0.0%
	US 218 to US 63	Bremer													0.0%	0.0%
IA 191	I-880 to IA 37	Pottawattamie, Harrison, Shelby													0.0%	0.0%
IA 202	MO border to IA 2	Davis, Appanoose													0.0%	0.0%
IA 210	IA 141 to I-35	Dallas, Boone,Story							39						7.4%	1.4%
	I-35 to US 65	Story													0.0%	0.0%
IA 212	IA 21 to US 6	Iowa													0.0%	0.0%
IA 220	US 6 to US 151	Iowa							83						18.2%	0.0%
IA 224	I-80 to IA 14	Jasper													0.0%	0.1%
IA 281	Waterloo E CL to IA 150	Black Hawk, Buchanan													2.3%	0.0%
IA 316	Runnells E CL to IA 5	Polk, Warren, Marion													0.0%	0.0%
IA 330	US 65 to US 30	Jasper, Story, Marshall													0.0%	82.2%
	US 30 to IA 14	Marshall													0.0%	2.4%
IA 346	US 218 to US 63	Chickasaw													6.1%	6.1%
IA 376	I-29 to IA 12	Woodbury							66						4.8%	37.4%
	IA 12 to US 75	Woodbury						171, 191							18.8%	22.9%
IA 404	IA 3 to US 75	Plymouth													45.5%	18.0%
IA 415	US 6 to I-35/80	Polk							15, 89						87.7%	39.4%
	I-35/80 to IA 160	Polk							89						29.2%	0.9%
	IA 160 to Ankeny W CL	Polk													0.0%	12.3%
	Ankeny W CL to IA 141	Polk							23						18.0%	25.4%
IA 461	I-280 to US 67	Scott						20							9.1%	13.5%
	US 67 to US 6	Scott						(39, 111)	73, 107						74.9%	74.9%
	US 6 to I-80	Scott						124, 191	73						5.0%	15.5%
IA 471	IA 175 to US 20	Sac						169							9.4%	0.0%
IA 906	N 6th St to I-80	Pottawattamie							7, 21, 99						58.6%	89.1%
IA 922	US 30 to I-380	Linn							42						35.5%	38.3%
	I-380 to IA 100	Linn							16, 88						82.1%	82.1%
IA 930	US 30 to 1.1 mi E of US 30	Boone													18.3%	0.0%
IA 946	S jct US 61 to N jct US 61	Dubuque							84						38.8%	38.8%
IA 965	US 6 to I-80	Johnson							81						55.4%	55.4%