

Crash Rates and Crash Densities on Secondary Roads in Iowa by Surface Type

2001 – 2009

Prepared by:

Office of Traffic and Safety
Engineering Bureau
Highway Division

In cooperation with:

Office of Driver Services
Motor Vehicle Division

July 6, 2010

Iowa Department of Transportation

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
9-year Averages: 2001 - 2009

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	10.35	11.94	218	622
Granular	6.33	7.15	165	410
Hard-Surfaced	4.16	4.62	131	339
Paved	2.69	2.98	58	171

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
8-year Averages: 2002 - 2009

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	9.37	9.81	207	602
Granular	6.27	7.02	164	408
Hard-Surfaced	4.47	4.81	131	338
Paved	2.70	2.99	58	170

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
7-year Averages: 2003 - 2009

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	10.65	11.16	194	557
Granular	6.17	6.94	160	397
Hard-Surfaced	4.10	4.48	131	337
Paved	2.66	2.95	57	169

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
6-year Averages: 2004 - 2009**

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	9.51	9.51	188	533
Granular	6.07	6.88	158	388
Hard-Surfaced	3.94	4.27	128	330
Paved	2.67	2.96	57	167

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
5-year Averages: 2005 - 2009**

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	7.89	7.89	182	525
Granular	6.10	7.00	156	382
Hard-Surfaced	4.17	4.43	126	326
Paved	2.66	2.98	57	166

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
4-year Averages: 2006 - 2009**

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	7.25	7.25	175	500
Granular	6.13	7.04	151	374
Hard-Surfaced	4.74	5.06	123	319
Paved	2.55	2.83	56	166

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
3-year Averages: 2007 - 2009**

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	7.39	7.39	171	496
Granular	6.24	7.15	142	360
Hard-Surfaced	5.26	5.47	119	314
Paved	2.41	2.66	55	164

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
2-year Averages: 2008 - 2009**

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	5.60	5.60	155	481
Granular	5.96	6.88	138	348
Hard-Surfaced	5.95	5.95	114	299
Paved	2.47	2.73	54	162

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2009

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	3.73	3.73	149	474
Granular	6.22	7.10	137	346
Hard-Surfaced	5.29	5.29	112	295
Paved	2.46	2.66	50	155

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
9-year Averages: 2001 - 2009

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State																
Earth	622	10.35	218	39.40	208	29.05	92	87	404	345	11.94	50.94	39.00	149	123	21.49
Granular	410	6.33	165	28.96	159	22.63	64	72	245	245	7.15	36.63	29.48	96	98	14.35
Hard-Surfaced	339	4.16	131	24.38	126	20.22	53	53	208	195	4.62	29.83	25.21	80	76	8.71
Paved	171	2.69	58	11.38	55	8.69	21	25	113	84	2.98	14.08	11.10	31	34	4.61

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
8-year Averages: 2002 - 2009

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State	602	9.37	207	37.91	198	28.54	84	86	394	329	9.81	48.17	38.35	136	121	24.08
Earth	408	6.27	164	28.55	158	22.28	63	72	244	241	7.02	35.84	28.82	92	97	15.75
Granular	338	4.47	131	24.13	126	19.66	52	55	207	193	4.81	29.28	24.47	78	76	9.28
Hard-Surfaced	170	2.70	58	11.28	55	8.58	21	25	113	83	2.99	13.87	10.88	30	34	4.93
Paved																

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
7-year Averages: 2003 - 2009

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State	557	10.65	194	36.01	184	25.36	77	81	363	310	11.16	46.15	34.99	129	111	23.84
Earth	397	6.17	160	27.56	153	21.40	60	72	237	234	6.94	34.48	27.54	89	94	16.82
Granular	337	4.10	131	24.00	127	19.91	52	55	205	193	4.48	28.86	24.38	79	76	9.81
Hard-Surfaced	169	2.66	57	11.11	55	8.45	21	26	112	82	2.95	13.66	10.70	30	34	5.27
Paved																

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
6-year Averages: 2004 - 2009

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State	533	9.51	188	32.11	178	22.59	76	80	345	307	9.51	42.21	32.70	128	111	26.16
Earth	388	6.07	158	27.03	152	20.96	59	72	230	232	6.88	34.10	27.23	87	93	17.96
Granular	330	3.94	128	22.64	124	18.70	52	53	202	188	4.27	27.45	23.19	78	73	9.08
Hard-Surfaced	167	2.67	57	11.01	55	8.35	20	26	110	82	2.96	13.60	10.64	29	33	5.57
Paved																

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
5-year Averages: 2005 - 2009

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State																
Earth	525	7.89	182	28.69	174	20.80	71	82	343	293	7.89	35.86	27.97	114	115	28.69
Granular	382	6.10	156	25.86	150	19.76	57	73	226	228	7.00	32.72	25.72	84	91	19.03
Hard-Surfaced	326	4.17	126	22.29	122	18.12	51	53	199	185	4.43	26.98	22.55	76	72	9.51
Paved	166	2.66	57	10.76	55	8.10	20	26	109	81	2.98	13.22	10.25	29	33	5.78

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
4-year Averages: 2006 - 2009

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State	500	7.25	175	29.89	168	22.65	72	72	325	277	7.25	36.23	28.99	113	107	20.83
Earth	374	6.13	151	25.02	145	18.89	56	70	223	221	7.04	32.04	24.99	82	90	17.21
Granular	319	4.74	123	21.07	119	16.34	51	51	196	182	5.06	25.81	20.75	77	72	7.19
Hard-Surfaced	166	2.55	56	10.54	53	7.99	20	25	110	78	2.83	12.82	9.99	28	33	4.88
Paved																

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
3-year Averages: 2007 - 2009

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State	496	7.39	171	29.55	164	22.16	70	71	325	281	7.39	34.47	27.09	111	119	16.01
Earth	360	6.24	142	24.36	136	18.12	52	66	218	210	7.15	31.25	24.10	78	85	14.88
Granular	314	5.26	119	20.58	113	15.33	50	48	195	175	5.47	25.62	20.15	75	67	7.45
Hard-Surfaced	164	2.41	55	10.13	52	7.72	20	25	110	77	2.66	12.39	9.73	27	33	4.41
Paved																

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
2-year Averages: 2008 - 2009

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State	481	5.60	155	26.13	149	20.53	60	69	327	224	5.60	26.13	20.53	86	101	11.20
Earth	348	5.96	138	22.69	132	16.74	51	64	210	203	6.88	29.57	22.69	77	83	13.71
Granular	299	5.95	114	22.13	108	16.19	47	45	185	175	5.95	29.07	23.12	76	65	5.29
Hard-Surfaced	162	2.47	54	9.66	51	7.19	19	25	109	75	2.73	11.83	9.10	27	32	4.15
Paved																

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Averages: 2009

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State																
Earth	474	3.73	149	26.13	146	22.39	60	63	325	205	3.73	26.13	22.39	75	97	7.46
Granular	346	6.22	137	23.66	131	17.44	53	61	209	202	7.10	30.23	23.13	79	79	14.02
Hard-Surfaced	295	5.29	112	17.84	107	12.55	48	46	183	180	5.29	22.46	17.18	81	72	4.62
Paved	155	2.46	50	9.41	48	6.94	17	23	105	72	2.66	11.48	8.82	25	32	3.75

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
9-year Averages: 2001 - 2009

Road System	All Crash	Fatal	Fatal + Injury	Fatal + Major	Injury	Major Injury	Minor Injury	Possible/Unknown	Property Damage	All Injury	Fatality	Fatal +	Major	Minor	Possible	Unknown
	Densities	Crash	Crash	Injury Crash	Crash	Crash	Crash	Injury Crash	Only Crash	Densities	Densities	Major Injury	Injury	Injury	Injury	Injury
State	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.00
Earth	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.00
Granular	0.07	0.00	0.03	0.01	0.03	0.00	0.01	0.01	0.04	0.04	0.00	0.01	0.01	0.02	0.02	0.00
Hard-Surfaced	0.34	0.00	0.13	0.02	0.13	0.02	0.05	0.05	0.21	0.19	0.00	0.03	0.03	0.08	0.08	0.01
Paved	0.40	0.01	0.14	0.03	0.13	0.02	0.05	0.06	0.27	0.20	0.01	0.03	0.03	0.07	0.08	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
8-year Averages: 2001 - 2009

Road System	All Crash	Fatal	Fatal + Injury	Fatal + Major	Injury	Major Injury	Minor Injury	Possible/Unknown	Property Damage	All Injury	Fatality	Fatal +	Major	Minor	Possible	Unknown
	Densities	Crash	Crash	Injury Crash	Crash	Crash	Crash	Injury Crash	Only Crash	Densities	Densities	Major Injury	Injury	Injury	Injury	Injury
State	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.00
Earth	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.00
Granular	0.07	0.00	0.03	0.00	0.03	0.00	0.01	0.01	0.04	0.04	0.00	0.01	0.01	0.02	0.02	0.00
Hard-Surfaced	0.34	0.00	0.13	0.02	0.13	0.02	0.05	0.05	0.21	0.19	0.00	0.03	0.02	0.08	0.08	0.01
Paved	0.40	0.01	0.14	0.03	0.13	0.02	0.05	0.06	0.27	0.20	0.01	0.03	0.03	0.07	0.08	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
7-year Averages: 2003 - 2009

Road System	Fatal		Fatal + Injury		Fatal + Major Injury		Injury		Major Injury		Minor Injury		Possible/Unknown Injury		Property Damage		Fatal + Major Injury		Minor Injury		Possible Injury		Unknown Injury	
	All Crash Densities	Crash Densities	Crash Densities	Injury Crash Densities	Crash Densities	Crash Densities	Crash Densities	Crash Densities	Crash Densities	Crash Densities	Injury Crash Densities	Crash Densities	Crash Densities	Crash Densities	Only Crash Densities	All Injury Densities	Fatality Densities	Major Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities
State																								
Earth	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00
Granular	0.07	0.00	0.03	0.00	0.03	0.00	0.01	0.01	0.00	0.04	0.04	0.00	0.01	0.00	0.02	0.02	0.00	0.01	0.00	0.02	0.02	0.02	0.02	0.00
Hard-Surfaced	0.34	0.00	0.13	0.02	0.13	0.02	0.05	0.05	0.00	0.21	0.19	0.00	0.03	0.02	0.08	0.08	0.00	0.03	0.02	0.08	0.08	0.08	0.08	0.01
Paved	0.40	0.01	0.14	0.03	0.13	0.02	0.05	0.06	0.00	0.27	0.20	0.01	0.03	0.03	0.07	0.07	0.01	0.03	0.03	0.07	0.08	0.08	0.08	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
6-year Averages: 2004 - 2009

Road System	Fatal		Fatal + Injury		Fatal + Major Injury		Injury		Major Injury		Minor Injury		Possible/Unknown Injury		Property Damage		Fatal + Major Injury		Minor Injury		Possible Injury		Unknown Injury	
	All Crash Densities	Crash Densities	Crash Densities	Injury Crash Densities	Crash Densities	Crash Densities	Crash Densities	Crash Densities	Crash Densities	Crash Densities	Injury Crash Densities	Only Crash Densities	All Injury Densities	Fatality Densities	Major Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities
State																								
Earth	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Granular	0.07	0.00	0.03	0.00	0.03	0.00	0.01	0.01	0.00	0.04	0.04	0.00	0.01	0.00	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00
Hard-Surfaced	0.33	0.00	0.13	0.02	0.12	0.02	0.05	0.05	0.00	0.20	0.19	0.00	0.03	0.02	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.01	0.01
Paved	0.40	0.01	0.14	0.03	0.13	0.02	0.05	0.06	0.00	0.26	0.19	0.01	0.03	0.03	0.07	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.01	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
5-year Averages: 2005 - 2009

Road System	Fatal		Fatal + Injury		Fatal + Major Injury		Injury		Major Injury		Minor Injury		Possible/Unknown		Property Damage		Fatal + Major Injury		Minor Injury		Possible Injury		Unknown Injury	
	All Crash Densities	Crash Densities	Crash Densities	Injury Crash Densities	Crash Densities	Crash Densities	Crash Densities	Crash Densities	Crash Densities	Crash Densities	Injury Crash Densities	Crash Densities	Crash Densities	Crash Densities	Only Crash Densities	All Injury Densities	Fatality Densities	Major Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities
State																								
Earth	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00
Granular	0.07	0.00	0.03	0.00	0.03	0.00	0.01	0.01	0.00	0.04	0.04	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.01	0.02	0.02	0.00	0.00
Hard-Surfaced	0.33	0.00	0.13	0.02	0.12	0.02	0.05	0.05	0.00	0.20	0.19	0.00	0.03	0.02	0.08	0.07	0.07	0.03	0.02	0.07	0.08	0.07	0.01	0.01
Paved	0.39	0.01	0.14	0.03	0.13	0.02	0.05	0.06	0.00	0.26	0.19	0.01	0.03	0.02	0.07	0.08	0.03	0.02	0.07	0.08	0.07	0.08	0.01	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
4-year Averages: 2006 - 2009

Road System	Crash Densities									Severity Densities						
	All Crash Densities	Fatal Crash Densities	Fatal + Injury Crash Densities	Fatal + Major Injury Crash Densities	Injury Crash Densities	Major Injury Crash Densities	Minor Injury Crash Densities	Possible/Unknown Injury Crash Densities	Property Damage Only Crash Densities	All Injury Densities	Fatality Densities	Fatal + Major Injury Densities	Major Injury Densities	Minor Injury Densities	Possible Injury Densities	Unknown Injury Densities
State	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00
Earth	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00
Granular	0.06	0.00	0.03	0.00	0.02	0.00	0.01	0.01	0.04	0.04	0.00	0.01	0.00	0.01	0.02	0.00
Hard-Surfaced	0.32	0.00	0.12	0.02	0.12	0.02	0.05	0.05	0.20	0.18	0.01	0.03	0.02	0.08	0.07	0.01
Paved	0.39	0.01	0.13	0.02	0.13	0.02	0.05	0.06	0.26	0.18	0.01	0.03	0.02	0.07	0.08	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
3-year Averages: 2007 - 2009

Road System	Crash Densities									Severity						
	All Crash Densities	Fatal Crash Densities	Fatal + Injury Crash Densities	Fatal + Major Injury Crash Densities	Injury Crash Densities	Major Injury Crash Densities	Minor Injury Crash Densities	Possible/Unknown Injury Crash Densities	Property Damage Only Crash Densities	All Injury Densities	Fatality Densities	Fatal + Major Injury Densities	Major Injury Densities	Minor Injury Densities	Possible Injury Densities	Unknown Injury Densities
State	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00
Earth	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00
Granular	0.06	0.00	0.02	0.00	0.02	0.00	0.01	0.01	0.04	0.04	0.00	0.01	0.00	0.01	0.01	0.00
Hard-Surfaced	0.31	0.01	0.12	0.02	0.11	0.02	0.05	0.05	0.20	0.18	0.01	0.03	0.02	0.07	0.07	0.01
Paved	0.39	0.01	0.13	0.02	0.12	0.02	0.05	0.06	0.26	0.18	0.01	0.03	0.02	0.06	0.08	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
2-year Averages: 2008 - 2009

Road System	All Crash	Fatal	Fatal + Injury	Fatal + Major	Injury	Major Injury	Minor Injury	Possible/Unknown	Property Damage	All Injury	Fatality	Fatal +	Major	Minor	Possible	Unknown
	Densities	Crash	Crash	Injury Crash	Crash	Crash	Crash	Injury Crash	Only Crash	Densities	Densities	Major Injury	Injury	Injury	Injury	Injury
State	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.00
Earth	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.00
Granular	0.06	0.00	0.02	0.00	0.02	0.00	0.01	0.01	0.04	0.03	0.00	0.01	0.00	0.01	0.01	0.00
Hard-Surfaced	0.30	0.01	0.11	0.02	0.11	0.02	0.05	0.04	0.18	0.17	0.01	0.03	0.02	0.08	0.07	0.01
Paved	0.38	0.01	0.13	0.02	0.12	0.02	0.05	0.06	0.26	0.18	0.01	0.03	0.02	0.06	0.08	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Averages: 2009

Road System	All Crash	Fatal	Fatal + Injury	Fatal + Major	Injury	Major Injury	Minor Injury	Possible/Unknown	Property Damage	All Injury	Fatality	Fatal +	Major	Minor	Possible	Unknown
	Densities	Crash	Crash	Injury Crash	Crash	Crash	Crash	Injury Crash	Only Crash	Densities	Densities	Major Injury	Injury	Injury	Injury	Injury
State	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.00
Earth	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.00
Granular	0.06	0.00	0.02	0.00	0.02	0.00	0.01	0.01	0.04	0.03	0.00	0.01	0.00	0.01	0.01	0.00
Hard-Surfaced	0.30	0.01	0.11	0.02	0.11	0.01	0.05	0.05	0.18	0.18	0.01	0.02	0.02	0.08	0.07	0.00
Paved	0.36	0.01	0.12	0.02	0.11	0.02	0.04	0.05	0.25	0.17	0.01	0.03	0.02	0.06	0.07	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2009**

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	3.73	3.73	149	474
Granular	6.22	7.10	137	346
Hard-Surfaced	5.29	5.29	112	295
Paved	2.46	2.66	50	155

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2008

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	7.46	7.46	160	489
Granular	5.70	6.66	138	350
Hard-Surfaced	6.61	6.61	116	303
Paved	2.49	2.80	57	170

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2007

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	10.86	10.86	203	525
Granular	6.81	7.68	152	385
Hard-Surfaced	3.90	4.55	128	344
Paved	2.29	2.51	57	169

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2006**

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	6.85	6.85	185	511
Granular	5.79	6.74	177	413
Hard-Surfaced	3.22	3.86	137	335
Paved	2.97	3.33	59	169

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2005**

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	10.34	10.34	210	620
Granular	5.99	6.84	174	414
Hard-Surfaced	1.93	1.93	139	350
Paved	3.11	3.57	63	169

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2004**

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	17.37	17.37	215	570
Granular	5.92	6.26	168	417
Hard-Surfaced	2.72	3.40	135	351
Paved	2.68	2.87	57	171

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2003**

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	17.25	20.70	231	700
Granular	6.75	7.34	171	449
Hard-Surfaced	5.17	5.90	155	383
Paved	2.66	2.93	58	180

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2002**

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	0.00	0.00	303	924
Granular	6.97	7.56	194	485
Hard-Surfaced	7.38	7.38	128	346
Paved	2.98	3.29	60	182

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2001

Road System	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
State				
Earth	18.49	29.58	307	788
Granular	6.80	8.14	174	426
Hard-Surfaced	1.48	2.95	128	347
Paved	2.63	2.85	61	177

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2009

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State																
Earth	474	3.73	149	26.13	146	22.39	60	63	325	205	3.73	26.13	22.39	75	97	7.46
Granular	346	6.22	137	23.66	131	17.44	53	61	209	202	7.10	30.23	23.13	79	79	14.02
Hard-Surfaced	295	5.29	112	17.84	107	12.55	48	46	183	180	5.29	22.46	17.18	81	72	4.62
Paved	155	2.46	50	9.41	48	6.94	17	23	105	72	2.66	11.48	8.82	25	32	3.75

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2008

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State	489	7.46	160	26.13	153	18.66	60	75	328	243	7.46	26.13	18.66	97	105	14.93
Earth	350	5.70	138	21.73	133	16.03	50	67	211	204	6.66	28.92	22.26	75	87	13.41
Granular	303	6.61	116	26.43	109	19.82	46	44	187	170	6.61	35.68	29.07	71	58	5.95
Hard-Surfaced	170	2.49	57	9.92	55	7.43	21	26	112	78	2.80	12.18	9.38	29	33	4.56
Paved																

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2007

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State	525	10.86	203	36.18	192	25.33	90	76	322	391	10.86	50.66	39.80	159	156	25.33
Earth	385	6.81	152	27.68	145	20.87	55	69	234	223	7.68	34.58	26.90	81	90	17.20
Granular	344	3.90	128	17.54	124	13.64	55	55	216	175	4.55	18.84	14.29	73	71	11.69
Hard-Surfaced	169	2.29	57	11.07	55	8.78	21	25	112	80	2.51	13.51	11.00	29	33	4.93
Paved																

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2006

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State	511	6.85	185	30.85	178	23.99	79	75	326	267	6.85	41.13	34.27	120	72	34.27
Earth	413	5.79	177	26.95	171	21.17	65	84	236	255	6.74	34.38	27.65	95	102	24.10
Granular	335	3.22	137	22.52	134	19.30	55	59	198	202	3.86	26.38	22.52	83	86	6.43
Hard-Surfaced	169	2.97	59	11.78	56	8.81	21	26	110	83	3.33	14.11	10.78	30	33	6.30
Paved																

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2005

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State	620	10.34	210	24.12	200	13.78	65	121	410	355	10.34	34.46	24.12	117	145	58.58
Earth	414	5.99	174	29.16	168	23.17	64	82	239	253	6.84	35.40	28.56	92	99	26.17
Granular	350	1.93	139	27.08	137	25.14	50	61	211	196	1.93	31.59	29.66	72	73	18.70
Hard-Surfaced	169	3.11	63	11.63	60	8.52	22	29	106	92	3.57	14.81	11.24	31	37	9.33
Paved																

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2004

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State	570	17.37	215	48.65	198	31.27	97	69	354	375	17.37	72.97	55.60	195	94	13.90
Earth	417	5.92	168	32.72	162	26.80	65	70	249	251	6.26	40.83	34.58	98	100	12.76
Granular	351	2.72	135	24.47	132	21.75	58	52	217	207	3.40	29.90	26.50	91	80	6.80
Hard-Surfaced	171	2.68	57	12.27	55	9.59	21	24	114	86	2.87	15.45	12.58	33	33	4.56
Paved																

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2003

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State	700	17.25	231	58.66	214	41.40	86	86	469	328	20.70	69.01	48.31	138	110	10.35
Earth	449	6.75	171	30.70	164	23.95	68	72	279	248	7.34	36.68	29.35	99	102	10.12
Granular	383	5.17	155	33.21	150	28.05	55	66	228	226	5.90	38.38	32.48	80	93	14.76
Hard-Surfaced	180	2.66	58	11.70	55	9.05	22	25	122	86	2.93	14.02	11.09	33	35	3.42
Paved																

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2002

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State	924	0.00	303	51.77	303	51.77	133	118	621	466	0.00	62.86	62.86	181	196	25.88
Earth	485	6.97	194	35.27	187	28.30	84	75	292	289	7.56	45.09	37.53	119	116	8.48
Granular	346	7.38	128	25.10	120	17.72	49	53	219	188	7.38	32.49	25.10	72	78	5.17
Hard-Surfaced	182	2.98	60	12.62	57	9.64	24	24	122	88	3.29	15.58	12.29	33	37	2.33
Paved																

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2001

Road System	All Crash Rates	Fatal Crash Rates	Fatal + Injury Crash Rates	Fatal + Major Injury Crash Rates	Injury Crash Rates	Major Injury Crash Rates	Minor Injury Crash Rates	Possible/Unknown Injury Crash Rates	Property Damage Only Crash Rates	All Injury Rates	Fatality Rates	Fatal + Major Injury Rates	Major Injury Rates	Minor Injury Rates	Possible Injury Rates	Unknown Injury Rates
State	788	18.49	307	51.77	288	33.28	155	100	481	477	29.58	73.95	44.37	263	141	0.00
Earth	426	6.80	174	32.16	167	25.36	76	66	252	271	8.14	42.82	34.68	120	105	3.36
Granular	347	1.48	128	26.58	127	25.10	58	44	219	217	2.95	34.70	31.75	100	79	3.69
Hard-Surfaced	177	2.63	61	12.24	59	9.61	25	24	115	95	2.85	15.91	13.06	40	37	1.72
Paved																

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2009

Road System	Crash Densities (crashes/mile)									Crash Densities (crashes/mile)						
	All Crash Densities	Fatal Crash Densities	Fatal + Injury Crash Densities	Fatal + Major Injury Crash Densities	Injury Crash Densities	Injury Crash Densities	Injury Crash Densities	Possible/Unknown Injury Crash Densities	Property Damage Only Crash Densities	All Injury Densities	Fatality Densities	Fatal + Major Injury Densities	Major Injury Densities	Minor Injury Densities	Possible Injury Densities	Unknown Injury Densities
State																
Earth	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.00
Granular	0.06	0.00	0.02	0.00	0.02	0.00	0.01	0.01	0.04	0.03	0.00	0.01	0.00	0.01	0.01	0.00
Hard-Surfaced	0.30	0.01	0.11	0.02	0.11	0.01	0.05	0.05	0.18	0.18	0.01	0.02	0.02	0.08	0.07	0.00
Paved	0.36	0.01	0.12	0.02	0.11	0.02	0.04	0.05	0.25	0.17	0.01	0.03	0.02	0.06	0.07	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2008

Road System	Fatal		Fatal + Injury		Fatal + Major Injury		Injury		Injury		Possible/Unknown		Property Damage		Fatal + Major		Major		Minor		Possible		Unknown	
	All Crash Densities	Crash Densities	Crash Densities	Injury Densities	Injury Densities	Crash Densities	Crash Densities	Crash Densities	Crash Densities	Injury Densities	Injury Densities	Crash Densities	Crash Densities	Crash Densities	All Injury Densities	Fatality Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities	Injury Densities
State	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Earth	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Granular	0.06	0.00	0.02	0.00	0.02	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.04	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Hard-Surfaced	0.30	0.01	0.12	0.03	0.11	0.02	0.05	0.04	0.04	0.04	0.04	0.04	0.19	0.17	0.01	0.04	0.03	0.03	0.07	0.06	0.06	0.06	0.01	0.01
Paved	0.40	0.01	0.13	0.02	0.13	0.02	0.05	0.06	0.06	0.06	0.06	0.06	0.26	0.18	0.01	0.03	0.02	0.02	0.07	0.08	0.08	0.01	0.01	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2007

Road System	All Crash	Fatal	Fatal + Injury	Fatal + Major	Injury	Injury	Injury	Possible/Unknown	Property Damage		Fatal +	Major	Minor	Possible	Unknown	
	Densities	Crash	Crash	Injury Crash	Crash	Crash	Crash	Injury Crash	Only Crash	All Injury	Fatality	Major Injury	Injury	Injury	Injury	
State																
Earth	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.00
Granular	0.07	0.00	0.03	0.00	0.02	0.00	0.01	0.01	0.04	0.04	0.00	0.01	0.00	0.01	0.02	0.00
Hard-Surfaced	0.34	0.00	0.13	0.02	0.12	0.01	0.06	0.06	0.22	0.18	0.00	0.02	0.01	0.07	0.07	0.01
Paved	0.40	0.01	0.13	0.03	0.13	0.02	0.05	0.06	0.26	0.19	0.01	0.03	0.03	0.07	0.08	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2006

Road System	All Crash	Fatal	Fatal + Injury	Fatal + Major	Injury	Injury	Injury	Possible/Unknown	Property Damage		Fatal +	Major	Minor	Possible	Unknown	
	Densities	Crash	Crash	Injury Crash	Crash	Crash	Crash	Injury Crash	Only Crash	All Injury	Fatality	Major Injury	Injury	Injury	Injury	Injury
State																
Earth	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.01	0.00	0.00
Granular	0.07	0.00	0.03	0.00	0.03	0.00	0.01	0.01	0.04	0.04	0.00	0.01	0.00	0.02	0.02	0.00
Hard-Surfaced	0.34	0.00	0.14	0.02	0.14	0.02	0.06	0.06	0.20	0.20	0.00	0.03	0.02	0.08	0.09	0.01
Paved	0.40	0.01	0.14	0.03	0.13	0.02	0.05	0.06	0.26	0.20	0.01	0.03	0.03	0.07	0.08	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2005

Road System	All Crash Densities	Fatal Crash Densities	Fatal + Injury Crash Densities	Fatal + Major Injury Crash Densities	Injury Crash Densities	Injury Crash Densities	Injury Crash Densities	Possible/Unknown Injury Crash Densities	Property Damage Only Crash Densities	All Injury Densities	Fatality Densities	Fatal + Major Injury Densities	Major Injury Densities	Minor Injury Densities	Possible Injury Densities	Unknown Injury Densities
State	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.00
Earth	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.00
Granular	0.07	0.00	0.03	0.01	0.03	0.00	0.01	0.01	0.04	0.04	0.00	0.01	0.01	0.02	0.02	0.00
Hard-Surfaced	0.35	0.00	0.14	0.03	0.14	0.03	0.05	0.06	0.21	0.20	0.00	0.03	0.03	0.07	0.07	0.02
Paved	0.40	0.01	0.15	0.03	0.14	0.02	0.05	0.07	0.25	0.22	0.01	0.04	0.03	0.07	0.09	0.02

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2004

Road System	All Crash Densities	Fatal Crash Densities	Fatal + Injury Crash Densities	Fatal + Major Injury Crash Densities	Injury Crash Densities	Injury Crash Densities	Injury Crash Densities	Possible/Unknown Injury Crash Densities	Property Damage Only Crash Densities	All Injury Densities	Fatality Densities	Fatal + Major Injury Densities	Major Injury Densities	Minor Injury Densities	Possible Injury Densities	Unknown Injury Densities
State	0.03	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.00
Earth	0.07	0.00	0.03	0.01	0.03	0.00	0.01	0.01	0.04	0.04	0.00	0.01	0.01	0.02	0.02	0.00
Granular	0.35	0.00	0.13	0.02	0.13	0.02	0.06	0.05	0.22	0.21	0.00	0.03	0.03	0.09	0.08	0.01
Hard-Surfaced Paved	0.41	0.01	0.14	0.03	0.13	0.02	0.05	0.06	0.27	0.21	0.01	0.04	0.03	0.08	0.08	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2003

Road System	All Crash	Fatal	Fatal + Injury	Fatal + Major	Injury	Injury	Injury	Possible/Unknown	Property Damage		Fatal +	Major	Minor	Possible	Unknown	
	Densities	Crash	Crash	Injury Crash	Crash	Crash	Crash	Injury Crash	Only Crash	All Injury	Fatality	Major Injury	Injury	Injury	Injury	
State																
Earth	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.03	0.02	0.00	0.00	0.00	0.01	0.01	0.00
Granular	0.08	0.00	0.03	0.01	0.03	0.00	0.01	0.01	0.05	0.04	0.00	0.01	0.01	0.02	0.02	0.00
Hard-Surfaced	0.37	0.01	0.15	0.03	0.15	0.03	0.05	0.06	0.22	0.22	0.01	0.04	0.03	0.08	0.09	0.01
Paved	0.43	0.01	0.14	0.03	0.13	0.02	0.05	0.06	0.29	0.21	0.01	0.03	0.03	0.08	0.09	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2002

Road System	Crash Densities (crashes/mile)									Severity						
	All Crash Densities	Fatal Crash Densities	Fatal + Injury Crash Densities	Fatal + Major Injury Crash Densities	Injury Crash Densities	Injury Crash Densities	Injury Crash Densities	Possible/Unknown Injury Crash Densities	Property Damage Only Crash Densities	All Injury Densities	Fatality Densities	Fatal + Major Injury Densities	Major Injury Densities	Minor Injury Densities	Possible Injury Densities	Unknown Injury Densities
State	0.05	0.00	0.02	0.00	0.02	0.00	0.01	0.01	0.03	0.02	0.00	0.00	0.00	0.01	0.01	0.00
Earth	0.05	0.00	0.02	0.00	0.02	0.00	0.01	0.01	0.03	0.02	0.00	0.00	0.00	0.01	0.01	0.00
Granular	0.09	0.00	0.03	0.01	0.03	0.01	0.01	0.01	0.05	0.05	0.00	0.01	0.01	0.02	0.02	0.00
Hard-Surfaced	0.34	0.01	0.12	0.02	0.12	0.02	0.05	0.05	0.21	0.18	0.01	0.03	0.02	0.07	0.08	0.01
Paved	0.41	0.01	0.14	0.03	0.13	0.02	0.05	0.05	0.28	0.20	0.01	0.04	0.03	0.08	0.08	0.01

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

Crash Densities (crashes/mile)
by Surface Type and Severity
Statewide, Secondary Road Crashes
1-year Average: 2001

Road System	All Crash	Fatal	Fatal + Injury	Fatal + Major	Injury	Injury	Injury	Possible/Unknown	Property Damage		Fatal +	Major	Minor	Possible	Unknown	
	Densities	Crash	Crash	Injury Crash	Crash	Crash	Crash	Injury Crash	Only Crash	All Injury	Fatality	Major Injury	Injury	Injury	Injury	
State																
Earth	0.04	0.00	0.02	0.00	0.01	0.00	0.01	0.01	0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.00
Granular	0.08	0.00	0.03	0.01	0.03	0.00	0.01	0.01	0.04	0.05	0.00	0.01	0.01	0.02	0.02	0.00
Hard-Surfaced	0.34	0.00	0.12	0.03	0.12	0.02	0.06	0.04	0.21	0.21	0.00	0.03	0.03	0.10	0.08	0.00
Paved	0.40	0.01	0.14	0.03	0.13	0.02	0.06	0.05	0.26	0.22	0.01	0.04	0.03	0.09	0.09	0.00

Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
Statewide, Secondary Road Crashes
2001 - 2009 Annual Summary**

Earth

	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
2001	18.49	29.58	307	788
2002	0.00	0.00	303	924
2003	17.25	20.70	231	700
2004	17.37	17.37	215	570
2005	10.34	10.34	210	620
2006	6.85	6.85	185	511
2007	10.86	10.86	203	525
2008	7.46	7.46	160	489
2009	3.73	3.73	149	474

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
Statewide, Secondary Road Crashes
2001 - 2009 Annual Summary**

Granular

	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
2001	6.80	8.14	174	426
2002	6.97	7.56	194	485
2003	6.75	7.34	171	449
2004	5.92	6.26	168	417
2005	5.99	6.84	174	414
2006	5.79	6.74	177	413
2007	6.81	7.68	152	385
2008	5.70	6.66	138	350
2009	6.22	7.10	137	346

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
Statewide, Secondary Road Crashes
2001 - 2009 Annual Summary**

Hard-Surfaced

Fatal + Injury

	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	All Crash Rates
2001	1.48	2.95	128	347
2002	7.38	7.38	128	346
2003	5.17	5.90	155	383
2004	2.72	3.40	135	351
2005	1.93	1.93	139	350
2006	3.22	3.86	137	335
2007	3.90	4.55	128	344
2008	6.61	6.61	116	303
2009	5.29	5.29	112	295

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**

**Crash Rates per 100 Million Vehicle Miles of Travel (crashes/HMVMT)
Statewide, Secondary Road Crashes
2001 - 2009 Annual Summary**

	Paved			All Crash Rates
	Fatal Crash Rates	Fatality Rates	Fatal + Injury Crash Rates	
2001	2.63	2.85	61	177
2002	2.98	3.29	60	182
2003	2.66	2.93	58	180
2004	2.68	2.87	57	171
2005	3.11	3.57	63	169
2006	2.97	3.33	59	169
2007	2.29	2.51	57	169
2008	2.49	2.80	57	170
2009	2.46	2.66	50	155

**Source: Iowa Department of Transportation, Office of Traffic and Safety
July 6, 2010**