

	FINAL REPORT	SUPPLEMENTAL BOOKLET
	<p>Total Cost of Transportation analysis of road and highway issues</p> <p>Phase II A restudy of Iowa county roads using FY2002 data</p>	<p>CONTAINS DATA AND RESULTS TABLES REFERRED TO IN THE TEXT OF THE MAIN REPORT.</p>
	<p>September 2003</p> <p>Submitted to:</p> <p>Highway Division of the Iowa Department of Transportation and Iowa Highway Research Board</p> <p>Project No. TR-477</p>	
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TR-477 Source data & Result tables

Table 1: RB-DOTsfcClasses				
DOT Sfc Type	Desc	TCT Sfc Class	Avg PC Eqv.	Max PC Eqv.
0	Unimproved / Unkown	1	0	0
2	Unimproved	1	0	0
3	Graded & drained	2	0	0
4	Graded & drained w/ borrow topping	2	0	0
6	Soil surface with admixture	2	0	0
20	Granular	3	0	2
21	Granular unkown admix	3	0	0
22	Granular admix	3	0	1
30	General bituminous	4	0.1	6
31	Bituminous on rock base	4	0.4	4
32	Bituminous on rock base/ w admix	4	0.4	3
41	Mixed Bituminous	4	0.2	3
60	Generic asphalt	6	2.3	10
61	ACC surface / soil base	5	1.6	4
62	ACC on soil base w admix	6	3.3	10
63	ACC surface / granular base	5	1.8	6
64	ACC surf on granular base w admix	6	2.2	6
65	ACC on old PCC	6	3.4	9
66	ACC on new PCC non-reinf.	6	3.8	8
67	ACC on new PCC reinf	6	3.6	5
68	Special ACC	6	3.4	6
69	ACC over ACC	6	3.3	11
70	Generic PCC	7	5.1	16
72	Old type PCC	6	4	14
73	Whitetopped PCC?	7	7	7
74	New type PCC	7	6.2	70
75	New tupe PCC [partially reinf]	7	6.3	15
76	New type PCC fully reinf	7	6.6	13
77	Special PCC resurfacing	8	11.3	16
79	PCC over ACC	7	6.1	15
82	Whitetopped ACC?	7	6.7	7
92	Comb ACC & ACC	7	7	7

Table 2 : LOSbandsTBL										
LOS#	Surface type	Surface class #	Number of lanes	Median width	Road width	Shoulder type	Shoulder	Avg LOS number	Min LOS number	Max LOS number
1	Earth - unimproved	1	1	0	8	1	0	110008	0	199999
2	Earth - 1 lane	2	1	0	12	1	0	210012	200000	219999
3	Earth - 2 lane	2	2	0	22	1	1	220023	220000	299999
4	Granular - Level 1	3	2	0	21	1	1	320022	300000	320024
5	Granular - Level 2	3	2	0	25	2	1	320026	320025	320028
6	Granular - Level 3	3	2	0	29	2	1	320030	320029	399999
7	HS - Lvl 1: Seal coat	4	2	0	22	2	2	420024	400000	420026
8	HS - Lvl 2: Macadam	4	2	0	26	2	2	420028	420027	499999
9	Paved - 2L - Level 1	5	2	0	20	2	4	520023	500000	599999
10	Paved - 2L - Level 2	6	2	0	22	2	6	620026	600000	699999
11	Paved - 2L - Level 3	7	2	0	26	2	10	720032	700000	720037
12	Paved - three lane	7	3	0	36	2	10	730042	720038	739999
13	Paved - four lane	7	4	0	48	2	10	740054	740000	740099
14	Paved - 4L divided & up	7	4	15	48	2	10	741554	740100	999999

Table 3: TrffcBandsTBL		
TB#	Min VPD	Max VPD
1	0	5.5
2	5.5	13.5
3	13.5	23.5
4	23.5	35.5
5	35.5	52.5
6	52.5	78.5
7	78.5	115.5
8	115.5	175.5
9	175.5	260.5
10	260.5	390.5
11	390.5	580.5
12	580.5	870.5
13	870.5	1300.5
14	1300.5	1950.5
15	1950.5	2920.5
16	2920.5	4365.5
17	4365.5	6530.5
18	6530.5	9770.5
19	9770.5	14620.5
20	14620.5	21880.5
21	21880.5	32735.5
22	32735.5	48980.5
23	48980.5	73280.5
24	73280.5	109650.5

Table 4 : Physical System model

Miles in each LOS / T-band classification.

LOS #	Traffic Band number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Miles	Million VMT/Yr	WMT mi-day
	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771			
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620			
	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.3	1557.2	2366.5	3549.1	5395.4	7341.2	11669			
14	Paved - 4 lane - divided							0.24		0.35				0.31	0.05	0.58	0.15	0.86	0.55		3.1	4.1	3600
13	Paved - 4 lane							0.09					0.61	0.03	0.48	0.33	0.10	0.54	0.16	0.60	2.9	4.9	4586
12	Paved - 3 lane		0.03	0.43	0.27		0.17	0.14	0.30	0.45	1.39	5.10	2.85	1.27	3.72	3.77	3.62	2.03	0.18	0.94	26.7	20.9	2147
11	Paved - 2 lane - Level 3	0.35	14.57	13.57	17.40	26.88	37.44	121.26	390.31	676.27	1050.16	1252.69	881.27	530.02	268.77	90.05	21.70	17.85	3.26	0.22	5414.1	1162.0	588
10	Paved - 2 lane - Level 2	1.13	18.07	14.76	32.92	75.66	83.88	273.03	630.62	1152.86	1760.52	1989.82	1895.75	1108.09	575.50	224.01	81.06	37.78	15.46	3.19	9974.1	2372.5	652
9	Paved - 2 lane - Level 1		1.47	2.55	5.22	7.10	3.66	34.45	68.91	109.16	91.02	75.05	47.02	24.12	21.34	17.64	0.45				509.2	87.2	469
8	Hard Surface - Level 2		1.19	2.40	7.59	17.42	9.74	35.51	52.66	35.84	21.74	18.67	22.00	5.11	5.90	1.01	1.20	0.09			238.1	26.9	309
7	Hard Surface - Level 1	1.19	11.13	8.26	19.70	49.91	60.28	170.01	201.11	237.52	164.80	104.25	42.30	29.65	11.27	7.71	0.38	0.49			1120.0	112.4	275
6	Gravel - Level 3	4.22	93.81	278.37	695.32	972.55	820.21	917.67	457.31	186.87	50.40	20.03	17.78	1.78	0.25	0.48	0.50				4517.6	130.0	79
5	Gravel - Level 2	142.80	1893.53	4683.60	8147.43	7516.70	4376.70	3512.80	1377.34	495.61	126.99	39.31	13.59	11.21	3.50	1.13	0.35				32342.6	613.2	52
4	Gravel - Level 1	442.45	3767.89	5953.59	7712.61	5931.56	3016.18	2238.80	764.66	291.77	85.64	31.69	4.95	5.68	0.70		1.52				30249.7	464.1	42
3	Earth 2 lane	943.38	2113.43	903.47	342.27	128.72	50.16	29.68	14.42	11.58	1.22	1.18									4539.5	25.0	15
2	Earth 1 lane		4.08	0.05					0.20												4.3	0.0	16
1	Unimproved	553.19	135.24	24.16	10.46	7.70	3.21	0.54	0.24		0.51										735.2	1.8	7
Total mi. in T-band:		2089	8054	11885	16991	14734	8462	7334	3958	3198	3355	3538	2928	1717	891	347	111	60	20	5	89677.0		
		2.33%	8.98%	13.25%	18.95%	16.43%	9.44%	8.18%	4.41%	3.57%	3.74%	3.95%	3.27%	1.91%	0.99%	0.39%	0.12%	0.07%	0.02%	0.01%			
VMT /Year		2.94	29.40	78.48	184.26	241.10	197.79	245.47	204.88	253.22	401.62	617.96	760.34	666.45	506.72	299.48	143.82	117.45	52.54	21.10	5025.0		
		0.06%	0.59%	1.56%	3.67%	4.80%	3.94%	4.89%	4.08%	5.04%	7.99%	12.30%	15.13%	13.26%	10.08%	5.96%	2.86%	2.34%	1.05%	0.42%			

Table 5 : Speed of travel

Average speed of travel table (mph)																						
Traffic Band number		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
LOS	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771	14620	
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620	21880	
#	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.3	1557.2	2366.5	3549.1	5395.4	7341.2	11669	17520	
14	Paved - 4 lane - divided	54.84	54.84	54.84	54.84	54.84	54.84	54.84	54.84	54.84	54.84	54.84	54.84	54.84	54.84	54.84	54.84	54.84	54.84	54.84	54.32	
13	Paved - 4 lane	52.01	52.01	52.01	52.01	52.01	52.01	52.01	52.01	52.01	52.01	52.01	52.01	52.01	52.01	52.01	52.01	52.01	52.01	51.70	51.00	
12	Paved - 3 lane	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	49.87	49.42	47.90	45.51	
11	Paved - 2 lane - Level 3	48.05	48.05	48.05	48.05	48.05	48.05	48.05	48.05	48.05	48.05	48.05	48.05	48.05	48.05	48.05	48.05	47.71	47.23	45.48	42.73	
10	Paved - 2 lane - Level 2	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.71	45.24	44.70	42.73	38.90	
9	Paved - 2 lane - Level 1	43.60	43.60	43.60	43.60	43.60	43.60	43.60	43.60	43.60	43.60	43.60	43.60	43.60	43.60	43.60	43.50	42.98	42.24	40.13	34.77	
8	Hard Surface - Level 2	40.90	40.90	40.90	40.90	40.90	40.90	40.90	40.90	40.90	40.90	40.90	40.90	40.90	40.90	40.90	40.50	39.70	38.51	34.83	29.24	
7	Hard Surface - Level 1	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.28	37.81	36.67	35.33	29.43	25.45	
6	Gravel - Level 3	34.49	34.49	34.49	34.49	34.49	34.49	34.49	34.49	34.49	34.49	34.49	34.49	34.49	34.26	33.82	32.60	30.53	25.28	22.02	15.14	9.24
5	Gravel - Level 2	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.48	32.08	31.23	29.66	24.75	21.17	15.55	11.82	0.69
4	Gravel - Level 1	30.60	30.60	30.60	30.60	30.60	30.60	30.60	30.60	30.60	30.60	30.60	30.48	30.11	29.25	27.89	23.24	20.09	14.00	11.63	0.69	0.46
3	Earth 2 lane	15.30	15.30	15.30	15.30	15.30	15.30	15.30	15.30	15.27	15.10	14.77	14.13	12.42	10.78	7.57	6.07	0.84	0.54	0.34	0.22	
2	Earth 1 lane	8.98	8.98	8.98	8.98	8.98	8.98	8.98	8.91	8.74	8.39	7.71	6.57	5.03	3.98	1.84	0.54	0.36	0.26	0.16	0.1	
1	Unimproved	5.44	5.44	5.44	5.38	5.28	5.09	4.75	4.03	3.01	2.41	1.11	0.52	0.35	0.24	0.16	0.10	0.07	0.05	0.03	0.0	

Note: grayed cells indicate situations where LOS cannot physically carry the traffic load

Table 6a : Per VMT costs of road/bridge network

Total Unit Cost of Transportation contributed by the road and highway network																				
LOS #	Traffic Band number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620
	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.25	1557.24	2366.5	3549.11	5395.38	7341.16	11668.87
14	Paved - 4 lane - divided	89.260	34.544	19.145	11.687	7.765	5.450	3.816	2.474	1.621	1.075	0.739	0.498	0.334	0.229	0.151	0.101	0.067	0.049	0.031
13	Paved - 4 lane	69.150	26.773	14.845	9.066	6.027	4.232	2.964	1.922	1.260	0.836	0.575	0.388	0.260	0.178	0.118	0.079	0.052	0.038	0.024
12	Paved - 3 lane	41.500	16.079	8.921	5.452	3.627	2.548	1.786	1.159	0.761	0.505	0.347	0.234	0.157	0.108	0.071	0.048	0.031	0.023	0.015
11	Paved - 2 lane - Level 3	26.908	10.434	5.794	3.544	2.359	1.659	1.164	0.756	0.496	0.330	0.227	0.153	0.103	0.071	0.047	0.031	0.021	0.015	0.010
10	Paved - 2 lane - Level 2	21.611	8.382	4.656	2.848	1.897	1.334	0.936	0.608	0.399	0.265	0.183	0.123	0.083	0.057	0.038	0.025	0.017	0.012	0.008
9	Paved - 2 lane - Level 1	17.760	6.893	3.832	2.346	1.563	1.100	0.772	0.502	0.330	0.219	0.151	0.102	0.069	0.047	0.031	0.021	0.014	0.010	0.006
8	Hard Surface - Level 2	12.016	4.678	2.608	1.601	1.070	0.755	0.532	0.347	0.228	0.152	0.105	0.071	0.048	0.033	0.022	0.015	0.010	0.007	0.005
7	Hard Surface - Level 1	9.973	3.881	2.163	1.328	0.887	0.626	0.441	0.287	0.189	0.126	0.087	0.059	0.040	0.027	0.018	0.012	0.008	0.006	0.004
6	Gravel - Level 3	7.545	2.935	1.635	1.003	0.670	0.472	0.332	0.216	0.143	0.095	0.066	0.044	0.030	0.021	0.014	0.009	0.006	0.004	0.003
5	Gravel - Level 2	6.094	2.370	1.320	0.810	0.541	0.381	0.268	0.175	0.115	0.077	0.053	0.036	0.024	0.017	0.011	0.007	0.005	0.004	0.002
4	Gravel - Level 1	5.333	2.075	1.156	0.709	0.474	0.334	0.235	0.153	0.101	0.067	0.046	0.031	0.021	0.015	0.010	0.006	0.004	0.003	0.002
3	Earth 2 lane	2.893	1.125	0.627	0.384	0.257	0.181	0.127	0.083	0.055	0.036	0.025	0.017	0.011	0.008	0.005	0.004	0.002	0.002	0.001
2	Earth 1 lane	1.803	0.701	0.391	0.240	0.160	0.113	0.079	0.052	0.034	0.023	0.016	0.011	0.007	0.005	0.003	0.002	0.001	0.001	0.001
1	Unimproved	1.429	0.556	0.310	0.190	0.127	0.090	0.063	0.041	0.027	0.018	0.013	0.008	0.006	0.004	0.003	0.002	0.001	0.001	0.001

Table 6b : Per VMT costs for vehicles

Total Unit Cost of Transportation contributed by vehicles																				
LOS #	Traffic Band number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620
	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.25	1557.24	2366.5	3549.11	5395.38	7341.16	11668.87
14	Paved - 4 lane - divided	0.6568	0.6568	0.6568	0.6568	0.6568	0.6568	0.6568	0.6568	0.6568	0.6568	0.6568	0.6568	0.6568	0.6568	0.6568	0.6568	0.6568	0.6568	0.6568
13	Paved - 4 lane	0.6540	0.6540	0.6540	0.6540	0.6540	0.6540	0.6540	0.6540	0.6540	0.6540	0.6540	0.6540	0.6540	0.6540	0.6540	0.6540	0.6540	0.6540	0.6540
12	Paved - 3 lane	0.6513	0.6513	0.6513	0.6513	0.6513	0.6513	0.6513	0.6513	0.6513	0.6513	0.6513	0.6513	0.6513	0.6513	0.6513	0.6513	0.6513	0.6513	0.6513
11	Paved - 2 lane - Level 3	0.6499	0.6499	0.6499	0.6499	0.6499	0.6499	0.6499	0.6499	0.6499	0.6499	0.6499	0.6499	0.6499	0.6499	0.6499	0.6499	0.6499	0.6499	0.6499
10	Paved - 2 lane - Level 2	0.6497	0.6497	0.6497	0.6497	0.6497	0.6497	0.6497	0.6497	0.6497	0.6497	0.6497	0.6497	0.6497	0.6497	0.6497	0.6497	0.6497	0.6497	0.6497
9	Paved - 2 lane - Level 1	0.6488	0.6488	0.6488	0.6488	0.6488	0.6488	0.6488	0.6488	0.6488	0.6488	0.6488	0.6488	0.6488	0.6488	0.6488	0.6488	0.6488	0.6488	0.6488
8	Hard Surface - Level 2	0.6522	0.6522	0.6522	0.6522	0.6522	0.6522	0.6522	0.6522	0.6522	0.6522	0.6522	0.6522	0.6522	0.6522	0.6522	0.6522	0.6522	0.6522	0.6522
7	Hard Surface - Level 1	0.7788	0.7788	0.7788	0.7788	0.7788	0.7788	0.7788	0.7788	0.7788	0.7788	0.7788	0.7788	0.7788	0.7788	0.7788	0.7788	0.7788	0.7788	0.7788
6	Gravel - Level 3	0.9056	0.9056	0.9056	0.9056	0.9056	0.9056	0.9056	0.9056	0.9056	0.9056	0.9056	0.9056	0.9056	0.9056	0.9056	0.9056	0.9056	0.9056	0.9056
5	Gravel - Level 2	1.0332	1.0332	1.0332	1.0332	1.0332	1.0332	1.0332	1.0332	1.0332	1.0332	1.0332	1.0332	1.0332	1.0332	1.0332	1.0332	1.0332	1.0332	1.0332
4	Gravel - Level 1	1.1604	1.1604	1.1604	1.1604	1.1604	1.1604	1.1604	1.1604	1.1604	1.1604	1.1604	1.1604	1.1604	1.1604	1.1604	1.1604	1.1604	1.1604	1.1604
3	Earth 2 lane	1.2963	1.2963	1.2963	1.2963	1.2963	1.2963	1.2963	1.2963	1.2963	1.2963	1.2963	1.2963	1.2963	1.2963	1.2963	1.2963	1.2963	1.2963	1.2963
2	Earth 1 lane	1.5584	1.5584	1.5584	1.5584	1.5584	1.5584	1.5584	1.5584	1.5584	1.5584	1.5584	1.5584	1.5584	1.5584	1.5584	1.5584	1.5584	1.5584	1.5584
1	Unimproved	1.8175	1.8175	1.8175	1.8175	1.8175	1.8175	1.8175	1.8175	1.8175	1.8175	1.8175	1.8175	1.8175	1.8175	1.8175	1.8175	1.8175	1.8175	1.8175

Table 6c : Per VMT Driver & Passenger paid time costs

Total Unit Cost of Transportation contributed by driver & passenger time																				
LOS #	Traffic Band number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620
	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.25	1557.24	2366.5	3549.11	5395.38	7341.16	11668.87
14	Paved - 4 lane - divided	0.3293	0.3293	0.3293	0.3293	0.3293	0.3293	0.3293	0.3293	0.3293	0.3293	0.3293	0.3293	0.3293	0.3293	0.3293	0.3293	0.3293	0.3293	0.3293
13	Paved - 4 lane	0.3451	0.3451	0.3451	0.3451	0.3451	0.3451	0.3451	0.3451	0.3451	0.3451	0.3451	0.3451	0.3451	0.3451	0.3451	0.3451	0.3451	0.3451	0.3472
12	Paved - 3 lane	0.3540	0.3540	0.3540	0.3540	0.3540	0.3540	0.3540	0.3540	0.3540	0.3540	0.3540	0.3540	0.3540	0.3540	0.3540	0.3540	0.3557	0.3589	0.3702
11	Paved - 2 lane - Level 3	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	0.3670	0.3707	0.3849
10	Paved - 2 lane - Level 2	0.3797	0.3797	0.3797	0.3797	0.3797	0.3797	0.3797	0.3797	0.3797	0.3797	0.3797	0.3797	0.3797	0.3797	0.3797	0.3797	0.3836	0.3882	0.4060
9	Paved - 2 lane - Level 1	0.3938	0.3938	0.3938	0.3938	0.3938	0.3938	0.3938	0.3938	0.3938	0.3938	0.3938	0.3938	0.3938	0.3938	0.3938	0.3947	0.3994	0.4064	0.4278
8	Hard Surface - Level 2	0.4193	0.4193	0.4193	0.4193	0.4193	0.4193	0.4193	0.4193	0.4193	0.4193	0.4193	0.4193	0.4193	0.4193	0.4193	0.4235	0.4320	0.4453	0.4922
7	Hard Surface - Level 1	0.4428	0.4428	0.4428	0.4428	0.4428	0.4428	0.4428	0.4428	0.4428	0.4428	0.4428	0.4428	0.4428	0.4444	0.4499	0.4638	0.4814	0.5776	
6	Gravel - Level 3	0.4890	0.4890	0.4890	0.4890	0.4890	0.4890	0.4890	0.4890	0.4890	0.4890	0.4890	0.4890	0.4923	0.4986	0.5173	0.5522	0.6668	0.7653	1.1123
5	Gravel - Level 2	0.5126	0.5126	0.5126	0.5126	0.5126	0.5126	0.5126	0.5126	0.5126	0.5126	0.5126	0.5146	0.5209	0.5350	0.5634	0.6748	0.7888	1.0730	1.4114
4	Gravel - Level 1	0.5406	0.5406	0.5406	0.5406	0.5406	0.5406	0.5406	0.5406	0.5406	0.5406	0.5428	0.5493	0.5655	0.5929	0.7114	0.8227	1.1801	1.4196	24.0260
3	Earth 2 lane	1.0853	1.0853	1.0853	1.0853	1.0853	1.0853	1.0853	1.0853	1.0872	1.0997	1.1241	1.1749	1.3370	1.5396	2.1922	2.7332	19.7889	30.8848	49.0909
2	Earth 1 lane	1.8788	1.8788	1.8788	1.8788	1.8788	1.8788	1.8788	1.8950	1.9301	2.0124	2.1891	2.5663	3.3521	4.2399	9.1618	31.0856	47.2558	64.2975	102.2008
1	Unimproved	3.1687	3.1687	3.1687	3.2005	3.2639	3.3840	3.6235	4.2728	5.7254	7.1345	15.5361	33.0475	49.3903	72.3365	109.9273	164.8604	250.6211	341.0042	542.0297

Table 6d : Per VMT cost of accidents

Total Unit Cost of Transportation due to accidents																				
LOS #	Traffic Band number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620
	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.25	1557.24	2366.5	3549.11	5395.38	7341.16	11668.87
14	Paved - 4 lane - divided	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
13	Paved - 4 lane	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
12	Paved - 3 lane	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
11	Paved - 2 lane - Level 3	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
10	Paved - 2 lane - Level 2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
9	Paved - 2 lane - Level 1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8	Hard Surface - Level 2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
7	Hard Surface - Level 1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
6	Gravel - Level 3	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
5	Gravel - Level 2	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
4	Gravel - Level 1	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
3	Earth 2 lane	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
2	Earth 1 lane	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
1	Unimproved	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Table 6e : Business and Economic costs of transportation

Total Unit Cost of Transportation contributed by Economic factors																				
LOS #	Traffic Band number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620
	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.25	1557.24	2366.5	3549.11	5395.38	7341.16	11668.87
14	Paved - 4 lane - divided	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
13	Paved - 4 lane	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029
12	Paved - 3 lane	0.00022	0.00022	0.00022	0.00022	0.00022	0.00022	0.00022	0.00022	0.00022	0.00022	0.00022	0.00022	0.00022	0.00022	0.00022	0.00022	0.00022	0.00023	0.00023
11	Paved - 2 lane - Level 3	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00019
10	Paved - 2 lane - Level 2	0.00017	0.00017	0.00017	0.00017	0.00017	0.00017	0.00017	0.00017	0.00017	0.00017	0.00017	0.00017	0.00017	0.00017	0.00017	0.00017	0.00017	0.00017	0.00018
9	Paved - 2 lane - Level 1	0.00016	0.00016	0.00016	0.00016	0.00016	0.00016	0.00016	0.00016	0.00016	0.00016	0.00016	0.00016	0.00016	0.00016	0.00016	0.00016	0.00016	0.00016	0.00017
8	Hard Surface - Level 2	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00013	0.00014
7	Hard Surface - Level 1	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00011	0.00012	0.00014
6	Gravel - Level 3	0.00006	0.00006	0.00006	0.00006	0.00006	0.00006	0.00006	0.00006	0.00006	0.00006	0.00006	0.00006	0.00006	0.00006	0.00007	0.00007	0.00009	0.00010	0.00014
5	Gravel - Level 2	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00006	0.00006	0.00006	0.00007	0.00008	0.00011	0.00015
4	Gravel - Level 1	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00006	0.00007	0.00010	0.00012	0.00202
3	Earth 2 lane	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00003	0.00004	0.00005	0.00034	0.00052	0.00083
2	Earth 1 lane	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00003	0.00004	0.00008	0.00026	0.00039	0.00054	0.00085
1	Unimproved	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00003	0.00006	0.00009	0.00013	0.00020	0.00030	0.00100

Table 6f : Social and Environmental costs of Transportation

Total Unit Cost of Transportation contributed by Social & Environmental factors																				
LOS #	Traffic Band number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620
	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.25	1557.24	2366.5	3549.11	5395.38	7341.16	11668.87
14	Paved - 4 lane - divided	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
13	Paved - 4 lane	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
12	Paved - 3 lane	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
11	Paved - 2 lane - Level 3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
10	Paved - 2 lane - Level 2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
9	Paved - 2 lane - Level 1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
8	Hard Surface - Level 2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
7	Hard Surface - Level 1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
6	Gravel - Level 3	0.00000	0.00000	0.00000	0.00000	0.00000	0.01283	0.01793	0.02705	0.02526	0.02130	0.01803	0.01463	0.01160	0.00924	0.00764	0.00621	0.00457	0.00373	0.00244
5	Gravel - Level 2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00851	0.01927	0.01920	0.01686	0.01468	0.01216	0.00979	0.00790	0.00665	0.00548	0.00405	0.00332	0.00217
4	Gravel - Level 1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01217	0.01364	0.01278	0.01159	0.00988	0.00812	0.00665	0.00573	0.00479	0.00356	0.00294	0.00192
3	Earth 2 lane	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01217	0.01364	0.01278	0.01159	0.00988	0.00812	0.00665	0.00573	0.00479	0.00356	0.00294	0.00192
2	Earth 1 lane	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01217	0.01364	0.01278	0.01159	0.00988	0.00812	0.00665	0.00573	0.00479	0.00356	0.00294	0.00192
1	Unimproved	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01217	0.01364	0.01278	0.01159	0.00988	0.00812	0.00665	0.00573	0.00479	0.00356	0.00294	0.00192

Table 6g : Per VMT Cost offsets

Total Unit Cost of Transportation offsets																				
LOS #	Traffic Band number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620
	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.25	1557.24	2366.5	3549.11	5395.38	7341.16	11668.87
14	Paved - 4 lane - divided	-6.883	-2.657	-1.469	-0.894	-0.593	-0.415	-0.290	-0.187	-0.122	-0.081	-0.056	-0.037	-0.025	-0.017	-0.011	-0.007	-0.005	-0.004	-0.002
13	Paved - 4 lane	-5.782	-2.232	-1.234	-0.751	-0.498	-0.349	-0.243	-0.157	-0.103	-0.068	-0.047	-0.031	-0.021	-0.014	-0.009	-0.006	-0.004	-0.003	-0.002
12	Paved - 3 lane	-4.194	-1.619	-0.895	-0.545	-0.361	-0.253	-0.177	-0.114	-0.075	-0.049	-0.034	-0.023	-0.015	-0.010	-0.007	-0.005	-0.003	-0.002	-0.001
11	Paved - 2 lane - Level 3	-2.902	-1.120	-0.619	-0.377	-0.250	-0.175	-0.122	-0.079	-0.052	-0.034	-0.023	-0.016	-0.011	-0.007	-0.005	-0.003	-0.002	-0.002	-0.001
10	Paved - 2 lane - Level 2	-2.267	-0.875	-0.484	-0.295	-0.195	-0.137	-0.095	-0.062	-0.040	-0.027	-0.018	-0.012	-0.008	-0.006	-0.004	-0.002	-0.002	-0.001	-0.001
9	Paved - 2 lane - Level 1	-1.785	-0.689	-0.381	-0.232	-0.154	-0.108	-0.075	-0.049	-0.032	-0.021	-0.014	-0.010	-0.006	-0.004	-0.003	-0.002	-0.001	-0.001	-0.001
8	Hard Surface - Level 2	-0.917	-0.354	-0.196	-0.119	-0.079	-0.055	-0.039	-0.025	-0.016	-0.011	-0.007	-0.005	-0.003	-0.002	-0.001	-0.001	-0.001	-0.001	0.000
7	Hard Surface - Level 1	-0.770	-0.297	-0.164	-0.100	-0.066	-0.046	-0.032	-0.021	-0.014	-0.009	-0.006	-0.004	-0.003	-0.002	-0.001	-0.001	-0.001	-0.001	0.000
6	Gravel - Level 3	-0.651	-0.251	-0.139	-0.085	-0.056	-0.039	-0.027	-0.018	-0.012	-0.008	-0.005	-0.004	-0.002	-0.002	-0.001	-0.001	-0.001	0.000	0.000
5	Gravel - Level 2	-0.521	-0.201	-0.111	-0.068	-0.045	-0.031	-0.022	-0.014	-0.009	-0.006	-0.004	-0.003	-0.002	-0.001	-0.001	-0.001	-0.001	0.000	0.000
4	Gravel - Level 1	-0.435	-0.168	-0.093	-0.056	-0.037	-0.026	-0.018	-0.012	-0.008	-0.005	-0.004	-0.002	-0.002	-0.001	-0.001	-0.001	0.000	0.000	0.000
3	Earth 2 lane	-0.238	-0.092	-0.051	-0.031	-0.020	-0.014	-0.010	-0.006	-0.004	-0.003	-0.002	-0.001	-0.001	-0.001	0.000	0.000	0.000	0.000	0.000
2	Earth 1 lane	-0.143	-0.055	-0.030	-0.019	-0.012	-0.009	-0.006	-0.004	-0.003	-0.002	-0.001	-0.001	-0.001	0.000	0.000	0.000	0.000	0.000	0.000
1	Unimproved	-0.083	-0.032	-0.018	-0.011	-0.007	-0.005	-0.003	-0.002	-0.001	-0.001	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 6h : Per VMT Total Cost of Transportation

Grand total of all Road Based Transportation System unit costs. Includes: Road & Bridge network, vehicles, human resource, accident, economic, social/environmental costs, minus offsets

LOS #	Traffic Band number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620
	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.25	1557.24	2366.5	3549.11	5395.38	7341.16	11668.87
14	Paved - 4 lane - divided	83.377	32.886	18.675	11.792	8.172	6.034	4.525	3.286	2.498	1.993	1.682	1.460	1.308	1.211	1.139	1.092	1.061	1.045	1.028
13	Paved - 4 lane	64.387	25.560	14.630	9.334	6.548	4.902	3.740	2.784	2.176	1.787	1.547	1.375	1.258	1.183	1.127	1.091	1.067	1.054	1.043
12	Paved - 3 lane	38.337	15.491	9.057	5.938	4.297	3.326	2.640	2.076	1.717	1.486	1.344	1.243	1.173	1.128	1.095	1.074	1.061	1.057	1.060
11	Paved - 2 lane - Level 3	25.052	10.360	6.221	4.214	3.156	2.531	2.088	1.723	1.491	1.342	1.250	1.184	1.139	1.110	1.089	1.075	1.068	1.067	1.076
10	Paved - 2 lane - Level 2	20.419	8.583	5.248	3.630	2.777	2.273	1.916	1.622	1.435	1.315	1.240	1.187	1.151	1.127	1.110	1.099	1.095	1.096	1.109
9	Paved - 2 lane - Level 1	17.068	7.298	4.544	3.207	2.503	2.086	1.791	1.547	1.392	1.292	1.230	1.186	1.156	1.136	1.122	1.113	1.112	1.115	1.133
8	Hard Surface - Level 2	12.224	5.449	3.537	2.607	2.116	1.825	1.618	1.447	1.337	1.266	1.223	1.191	1.170	1.156	1.145	1.143	1.147	1.158	1.202
7	Hard Surface - Level 1	10.478	4.860	3.274	2.503	2.096	1.855	1.684	1.542	1.451	1.392	1.356	1.330	1.312	1.301	1.294	1.294	1.304	1.320	1.414
6	Gravel - Level 3	8.344	4.133	2.946	2.368	2.064	1.896	1.773	1.676	1.606	1.559	1.528	1.506	1.492	1.488	1.499	1.528	1.638	1.734	2.078
5	Gravel - Level 2	7.193	3.790	2.830	2.363	2.117	1.971	1.876	1.801	1.746	1.708	1.684	1.668	1.661	1.666	1.688	1.795	1.905	2.188	2.524
4	Gravel - Level 1	6.680	3.688	2.844	2.434	2.217	2.089	1.998	1.934	1.888	1.856	1.838	1.829	1.834	1.854	1.967	2.074	2.428	2.666	25.272
3	Earth 2 lane	5.115	3.492	3.035	2.812	2.695	2.626	2.576	2.547	2.525	2.520	2.532	2.574	2.729	2.927	3.576	4.115	21.169	32.263	50.468
2	Earth 1 lane	5.119	4.104	3.818	3.679	3.606	3.562	3.532	3.534	3.555	3.626	3.795	4.165	4.946	5.831	10.750	32.672	48.841	65.881	103.784
1	Unimproved	6.347	5.525	5.293	5.212	5.216	5.300	5.515	6.156	7.596	8.996	17.391	34.897	51.235	74.179	111.767	166.699	252.458	342.840	543.865
	Min UCT	5.115	3.492	2.830	2.363	2.064	1.825	1.618	1.447	1.337	1.266	1.223	1.184	1.139	1.110	1.089	1.074	1.061	1.045	1.028

TR-477 Source data & Result tables

Table 7 : Cost to Upgrade, (or downgrade) from one LOS to another

Cost to Upgrade worksheet

This table indicates the incremental capital that must be invested to upgrade, (or downgrade), a mile of road from one LOS to another.

It's based on the presumption that TCT's annual cost factors already cover, via depreciation, the capital renewal to replace & maintain existing levels of service.

Therefore, this table shows the cost to upgrade as the difference between the new LOS and 1/2 the value of the old LOS

Cost to downgrade is estimated to be 1/3 the cost to upgrade

		32,481	48,552	81,875	122,756	142,140	175,974	207,742	248,220	443,488	540,124	677,651	926,269	1,289,974	1,537,993	
		To:														Cost
FROM	Existing Level of Service	Proposed new level of service														New
LOS #		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
14	Paved - 4 lane - divided	501,837	496,480	485,372	471,745	465,284	454,006	443,417	429,924	364,835	332,623	286,780	203,908	82,673	-	\$1,537,993
13	Paved - 4 lane	419,165	413,808	402,700	389,073	382,611	371,333	360,744	347,251	282,162	249,950	204,108	121,235	-	893,006	\$1,289,974
12	Paved - 3 lane	297,929	292,572	281,464	267,837	261,376	250,098	239,509	226,016	160,927	128,715	82,872	-	826,840	1,074,858	\$926,269
11	Paved - 2 lane - Level 3	215,057	209,700	198,592	184,965	178,504	167,226	156,636	143,144	78,055	45,842	-	587,443	951,149	1,199,167	\$677,651
10	Paved - 2 lane - Level 2	169,215	163,858	152,750	139,123	132,661	121,383	110,794	97,301	32,212	-	407,589	656,207	1,019,912	1,267,931	\$540,124
9	Paved - 2 lane - Level 1	137,002	131,645	120,537	106,910	100,449	89,171	78,582	65,089	-	318,380	455,907	704,525	1,068,230	1,316,249	\$443,488
8	Hard Surface - Level 2	71,913	66,556	55,448	41,821	35,360	24,082	13,493	-	319,377	416,014	553,541	802,158	1,165,864	1,413,882	\$248,220
7	Hard Surface - Level 1	58,421	53,064	41,956	28,329	21,867	10,589	-	144,349	339,616	436,253	573,780	822,398	1,186,103	1,434,122	\$207,742
6	Gravel - Level 3	47,831	42,474	31,366	17,739	11,278	-	119,755	160,233	355,501	452,137	589,664	838,282	1,201,987	1,450,006	\$175,974
5	Gravel - Level 2	36,553	31,196	20,088	6,461	-	104,904	136,672	177,150	372,418	469,054	606,581	855,199	1,218,904	1,466,923	\$142,140
4	Gravel - Level 1	30,092	24,735	13,627	-	80,762	114,596	146,364	186,842	382,109	478,746	616,273	864,891	1,228,596	1,476,615	\$122,756
3	Earth 2 lane	16,465	11,108	-	81,819	101,203	135,037	166,805	207,283	402,550	499,187	636,714	885,331	1,249,037	1,497,055	\$81,875
2	Earth 1 lane	5,357	-	57,599	98,480	117,864	151,698	183,466	223,945	419,212	515,848	653,375	901,993	1,265,698	1,513,717	\$48,552
1	Unimproved	-	32,311	65,635	106,516	125,900	159,734	191,502	231,980	427,247	523,884	661,411	910,028	1,273,734	1,521,752	\$32,481

Table 8a : Per VMT cost savings to change from higher or lower LOS to optimal

Difference between min UCT and actual UCT for each LOS / T-band combination

LOS #	Traffic Band number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620
	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.25	1557.24	2366.5	3549.11	5395.38	7341.16	11668.87
14	Paved - 4 lane - divided	78.262	29.394	15.846	9.429	6.108	4.209	2.907	1.839	1.161	0.727	0.460	0.276	0.169	0.101	0.050	0.019	-	-	-
13	Paved - 4 lane	59.272	22.068	11.801	6.971	4.484	3.077	2.122	1.337	0.839	0.521	0.324	0.191	0.119	0.073	0.038	0.017	0.006	0.010	0.015
12	Paved - 3 lane	33.222	11.998	6.228	3.575	2.233	1.501	1.022	0.629	0.380	0.220	0.122	0.058	0.034	0.018	0.007	-	0.000	0.012	0.033
11	Paved - 2 lane - Level 3	19.938	6.868	3.392	1.851	1.092	0.706	0.470	0.277	0.154	0.076	0.028	-	-	-	-	0.001	0.007	0.022	0.048
10	Paved - 2 lane - Level 2	15.304	5.090	2.418	1.267	0.714	0.448	0.298	0.176	0.098	0.048	0.018	0.003	0.012	0.017	0.021	0.025	0.034	0.051	0.082
9	Paved - 2 lane - Level 1	11.954	3.805	1.714	0.844	0.439	0.261	0.173	0.101	0.055	0.026	0.008	0.002	0.017	0.026	0.033	0.039	0.051	0.071	0.106
8	Hard Surface - Level 2	7.109	1.956	0.707	0.244	0.052	-	-	-	-	-	-	0.007	0.031	0.046	0.057	0.069	0.086	0.113	0.174
7	Hard Surface - Level 1	5.363	1.367	0.445	0.140	0.033	0.030	0.066	0.095	0.114	0.126	0.134	0.146	0.173	0.191	0.205	0.220	0.243	0.275	0.386
6	Gravel - Level 3	3.229	0.641	0.116	0.005	-	0.071	0.155	0.229	0.269	0.292	0.306	0.321	0.353	0.378	0.410	0.454	0.577	0.690	1.051
5	Gravel - Level 2	2.079	0.297	-	-	0.053	0.146	0.258	0.354	0.409	0.442	0.461	0.484	0.522	0.556	0.600	0.721	0.845	1.143	1.496
4	Gravel - Level 1	1.565	0.196	0.014	0.071	0.154	0.264	0.380	0.488	0.551	0.590	0.615	0.645	0.695	0.743	0.878	1.000	1.367	1.621	24.244
3	Earth 2 lane	-	-	0.205	0.449	0.631	0.801	0.958	1.101	1.188	1.253	1.310	1.390	1.590	1.817	2.488	3.041	20.108	31.219	49.440
2	Earth 1 lane	0.004	0.612	0.989	1.316	1.542	1.738	1.914	2.088	2.218	2.359	2.572	2.981	3.807	4.721	9.662	31.598	47.780	64.837	102.756
1	Unimproved	1.232	2.032	2.463	2.849	3.152	3.476	3.897	4.709	6.259	7.730	16.168	33.713	50.096	73.069	110.679	165.625	251.397	341.796	542.837
	Min UCT																			

Table 8b: Cost to adjust LOS to optimal – for each traffic band

Cost to upgrade or downgrade to LOS of min UCT per mile

LOS #	Traffic Band number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620
	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.25	1557.24	2366.5	3549.11	5395.38	7341.16	11668.87
14	Paved - 4 lane - divided	485,372	485,372	463,145	463,145	451,431	427,050	427,050	427,050	427,050	427,050	427,050	279,545	279,545	279,545	203,908	-	-	-	-
13	Paved - 4 lane	402,700	402,700	380,472	380,472	368,758	344,377	344,377	344,377	344,377	344,377	344,377	196,872	196,872	196,872	121,235	893,006	893,006	893,006	893,006
12	Paved - 3 lane	281,464	281,464	259,237	259,237	247,523	223,142	223,142	223,142	223,142	223,142	223,142	75,637	75,637	75,637	-	1,074,858	1,074,858	1,074,858	1,074,858
11	Paved - 2 lane - Level 3	205,828	205,828	183,600	183,600	171,887	147,505	147,505	147,505	147,505	147,505	147,505	-	-	-	587,443	1,188,313	1,188,313	1,188,313	1,188,313
10	Paved - 2 lane - Level 2	157,626	157,626	135,399	135,399	123,685	99,304	99,304	99,304	99,304	99,304	99,304	421,981	421,981	421,981	656,207	1,260,615	1,260,615	1,260,615	1,260,615
9	Paved - 2 lane - Level 1	124,410	124,410	102,182	102,182	90,468	66,087	66,087	66,087	66,087	66,087	66,087	471,806	471,806	471,806	704,525	1,310,441	1,310,441	1,310,441	1,310,441
8	Hard Surface - Level 2	58,323	58,323	36,095	36,095	24,382	-	-	-	-	-	-	570,937	570,937	570,937	802,158	1,409,571	1,409,571	1,409,571	1,409,571
7	Hard Surface - Level 1	44,596	44,596	22,368	22,368	10,655	149,012	149,012	149,012	149,012	149,012	149,012	591,527	591,527	591,527	822,398	1,430,161	1,430,161	1,430,161	1,430,161
6	Gravel - Level 3	33,941	33,941	11,714	11,714	-	164,994	164,994	164,994	164,994	164,994	164,994	607,509	607,509	607,509	838,282	1,446,143	1,446,143	1,446,143	1,446,143
5	Gravel - Level 2	22,227	22,227	-	-	109,420	182,565	182,565	182,565	182,565	182,565	182,565	625,080	625,080	625,080	855,199	1,463,714	1,463,714	1,463,714	1,463,714
4	Gravel - Level 1	15,265	15,265	84,722	84,722	119,864	193,009	193,009	193,009	193,009	193,009	193,009	635,524	635,524	635,524	864,891	1,474,158	1,474,158	1,474,158	1,474,158
3	Earth 2 lane	-	-	107,619	107,619	142,761	215,906	215,906	215,906	215,906	215,906	215,906	658,421	658,421	658,421	885,331	1,497,055	1,497,055	1,497,055	1,497,055
2	Earth 1 lane	57,599	57,599	124,281	124,281	159,423	232,568	232,568	232,568	232,568	232,568	232,568	675,083	675,083	675,083	901,993	1,513,717	1,513,717	1,513,717	1,513,717
1	Unimproved	65,635	65,635	132,317	132,317	167,459	240,603	240,603	240,603	240,603	240,603	240,603	683,118	683,118	683,118	910,028	1,521,752	1,521,752	1,521,752	1,521,752
	To LOS:	2	3	4	5	6	8	8	8	8	8	8	9	11	11	11	14	14	14	14

Table 9 : Use of 20 year Savings to Cost Ratios to classify LOS/Traffic band mileages

LOS #	Traffic Band number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620
	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.25	1557.24	2366.5	3549.11	5395.38	7341.16	11668.87
14	Paved - 4 lane - divided	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.1	2.0	1.8	2.5	2.3	2.0	2.1	X	X	X	X
13	Paved - 4 lane	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	1.9	1.8	1.6	2.5	2.3	2.1	2.7	0.2	0.1	0.3	0.7
12	Paved - 3 lane	1.6	1.5	1.6	1.5	1.4	1.5	1.5	1.4	1.3	1.2	0.9	2.0	1.7	1.3	X	0.0	0.0	0.3	1.3
11	Paved - 2 lane - Level 3	1.3	1.2	1.2	1.1	1.0	1.1	1.0	1.0	0.8	0.6	0.3	X	X	X	0.0	0.0	0.1	0.5	1.7
10	Paved - 2 lane - Level 2	1.3	1.2	1.2	1.0	0.9	1.0	1.0	0.9	0.8	0.6	0.3	0.0	0.1	0.2	0.3	0.2	0.5	1.1	2.7
9	Paved - 2 lane - Level 1	1.3	1.1	1.1	0.9	0.8	0.9	0.9	0.8	0.6	0.5	0.2	0.0	0.1	0.3	0.4	0.4	0.8	1.4	3.4
8	Hard Surface - Level 2	1.7	1.2	1.3	0.7	0.3	X	X	X	X	X	X	0.0	0.2	0.4	0.6	0.6	1.2	2.1	5.2
7	Hard Surface - Level 1	1.7	1.1	1.3	0.7	0.5	0.0	0.1	0.3	0.6	1.0	1.5	0.6	1.1	1.8	2.1	2.0	3.3	5.1	11.3
6	Gravel - Level 3	1.3	0.7	0.6	0.0	X	0.1	0.3	0.7	1.3	2.1	3.2	1.3	2.2	3.5	4.1	4.0	7.7	12.5	30.4
5	Gravel - Level 2	1.3	0.5	X	X	0.1	0.2	0.5	1.0	1.7	2.8	4.3	2.0	3.2	5.0	5.9	6.3	11.1	20.5	42.7
4	Gravel - Level 1	1.4	0.5	0.0	0.1	0.2	0.3	0.6	1.3	2.2	3.6	5.5	2.6	4.2	6.5	8.6	8.6	17.9	28.9	687.2
3	Earth 2 lane	X	X	0.1	0.4	0.7	0.9	1.5	2.6	4.3	6.8	10.4	5.4	9.2	15.4	23.8	25.8	259.5	548.2	1379.9
2	Earth 1 lane	0.0	0.4	0.5	1.1	1.6	1.7	2.7	4.6	7.4	11.9	19.0	11.2	21.5	39.0	90.8	265.3	609.8	1125.9	2836.3
1	Unimproved	0.3	1.1	1.2	2.3	3.0	3.3	5.3	9.9	20.2	37.7	115.2	125.7	279.2	596.4	1030.6	1383.1	3191.5	5904.0	14904.5

Table 10a : Magnitudes and Relationships of Costs

Analysis of Total Cost of Transportation for Secondary Roads in 2002

LOS #	Cost source	Road network	Vehicles	Paid Time	Accidents	Business Econ.	Social Env.	Cost Offsets	Total Cost	Road AEOMRD			
14	Paved - 4 lane - divided	0.403	2.670	1.339	0.052	0.001	-	(0.030)	4.435	0.189			
13	Paved - 4 lane	0.298	3.213	1.701	0.095	0.001	-	(0.024)	5.285	0.129			
12	Paved - 3 lane	1.630	13.602	7.467	0.529	0.005	-	(0.157)	23.075	0.517			
11	Paved - 2 lane - Level 3	214.408	755.242	423.575	37.302	0.205	-	(22.140)	1,408.593	65.505			
10	Paved - 2 lane - Level 2	318.156	1,541.287	901.759	110.228	0.399	-	(31.862)	2,839.967	105.279			
9	Paved - 2 lane - Level 1	13.371	56.552	34.329	4.418	0.014	-	(1.281)	107.404	4.919			
8	Hard Surface - Level 2	4.293	17.535	11.283	1.431	0.003	-	(0.308)	34.238	2.261			
7	Hard Surface - Level 1	16.732	87.534	49.798	6.029	0.012	-	(1.215)	158.890	8.701			
6	Gravel - Level 3	49.810	117.759	63.642	7.195	0.008	2.086	(4.142)	236.359	22.768			
5	Gravel - Level 2	285.889	633.516	314.538	45.850	0.034	3.596	(23.760)	1,259.663	129.275			
4	Gravel - Level 1	233.153	538.585	251.565	37.137	0.021	1.035	(18.525)	1,042.970	106.389			
3	Earth 2 lane	18.694	32.416	27.152	1.933	0.000	0.026	(1.520)	78.702	8.400			
2	Earth 1 lane	0.011	0.040	0.048	0.001	0.000	0.000	(0.001)	0.099	0.005			
1	Unimproved	1.485	3.341	6.120	0.026	0.000	0.001	(0.086)	10.887	0.789			
		1,158.334	3,803.293	2,094.316	252.226	0.704	6.744	(105.050)	7,210.567	455.127	6.31%	AEOMRD	
		16.06%	52.75%	29.05%	3.50%	0.01%	0.09%	-1.46%		21.945	0.30%	Improvements	
										477.072	6.62%	Total Road Expenditures	

Shows total annual cost of system activity in \$Millions

Road network cost of 1,158.334 includes cost of capital and auxilliary items, as well as the 477.072, actually spend by county Road Depts.

Table 10b : AEOMRD Costs – per year – for each LOS / T-band combination

Sum of Road agency costs: Admin, Engineering, Depreciation, Operations, Maintenance, and Repairs -- the costs needed to sustain the system in a steady state condition.																				
LOS #	Traffic Band number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620
	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.25	1557.24	2366.5	3549.11	5395.38	7341.16	11668.87
14	Paved - 4 lane - divided	0	0	0	0	0	0	0	13963	0	21028	0	0	18830	3044	35740	9167	53440	33949	0
13	Paved - 4 lane	0	0	0	0	0	0	3613	0	0	0	0	26199	1343	21109	14403	4200	23856	7258	27197
12	Paved - 3 lane	0	525	7355	4636	0	3044	2577	5381	8381	26038	96378	54387	24595	72665	74547	72314	41010	3657	19390
11	Paved - 2 lane - Level 3	3664	154183	145991	190108	298448	422172	1388457	4536820	7978151	12571506	15213648	10855919	6621129	3404194	1156237	282413	235373	43556	3018
10	Paved - 2 lane - Level 2	10306	167121	138719	314193	733180	825101	2725698	6387880	11846843	18349152	21030603	20314037	12036141	6335461	2498895	916140	432532	179264	37431
9	Paved - 2 lane - Level 1	0	12559	22220	46166	63770	33395	318899	647400	1040687	880383	736398	467904	243338	218305	182860	4707	0	0	0
8	Hard Surface - Level 2	0	10129	20862	67055	156299	88855	329022	495538	342422	210832	183818	219730	51787	60690	10570	12715	932	0	0
7	Hard Surface - Level 1	8207	77887	58752	142410	366670	449856	1288671	1547915	1855923	1306947	838942	345364	245502	94650	65604	3271	4295	0	0
6	Gravel - Level 3	19596	443322	1338313	3399957	4835347	4145198	4713074	2386244	990391	271272	109457	98633	10007	1422	2769	2920	0	0	0
5	Gravel - Level 2	534582	7213399	18151404	32113505	30123744	17828920	14541687	5792604	2117081	550824	173115	60735	50855	16102	5251	1647	0	0	0
4	Gravel - Level 1	1470581	12743819	20484530	26987870	21102516	10906985	8226785	2854557	1106265	329729	123847	19645	22845	2871	0	6373	0	0	0
3	Earth 2 lane	1706669	3888472	1690104	650808	248726	98464	59171	29193	23804	2553	2492	0	0	0	0	0	0	0	0
2	Earth 1 lane	0	4821	60	0	0	0	0	258	0	0	0	0	0	0	0	0	0	0	0
1	Unimproved	590151	146587	26597	11692	8740	3696	633	280	0	623	0	0	0	0	0	0	0	0	0

4343755 24862823 42084908 63928401 57937440 34805687 33598287 24698033 27309947 34520887 38508698 32462551 19326373 10230513 4046877 1315867 791438 267684 87036
 Total = 455127204

Table 10c : Design Guide implications:

	LOS	#	3	5	6	8	11	12	14
Traffic Band number	Min VPD	Max VPD	Earth 2 lane	Gravel - Level 2	Gravel - Level 3	Hard Surface - Level 2	Paved - 2 lane - Level 3	Paved - 3 lane	Paved - 4 lane - divided
1-2	0	13	X						
3-4	13	35		X					
5	35	52			X				
6-11	52	580				X			
12-15	580	2920					X		
16	2920	4365						X	
17-19	4365	14620							X

Table 10d – Traffic Count concerns

Comparative analysis : Changes in County Road miles and annual VMT						Comparison of calc'd VMT chg rates vs. Avg in BR			
County	COname	Miles		Annual VMT		9-Feb-03 Net change 98 ->02		Calc'd annl VMT change	Avg Annl VMT chg per DOT
		1998	2002	1998	2002	Miles	VMT		
1	Adair	1023.667	1023.488	31,270,623	31,582,917	-0.017%	0.999%	0.249%	0.994%
2	Adams	715.464	713.827	15,839,253	16,037,001	-0.229%	1.248%	0.311%	0.988%
3	Allamakee	885.224	875.306	37,715,432	37,404,233	-1.120%	-0.825%	-0.207%	0.405%
4	Appanoose	750.389	748.099	30,358,256	32,146,855	-0.305%	5.892%	1.441%	2.125%
5	Audubon	764.898	764.884	21,014,955	22,484,809	-0.002%	6.994%	1.705%	0.393%
6	Benton	1204.859	1205.152	73,001,752	74,376,654	0.024%	1.883%	0.468%	2.269%
7	Black Hawk	782.582	782.138	96,032,807	98,408,142	-0.057%	2.473%	0.613%	3.436%
8	Boone	972.865	972.625	53,835,631	63,389,257	-0.025%	17.746%	4.169%	2.224%
9	Bremer	711.915	712.553	51,482,124	49,046,067	0.090%	-4.732%	-1.205%	1.682%
10	Buchanan	927.323	927.287	56,999,017	57,666,902	-0.004%	1.172%	0.292%	1.534%
11	Buena Vista	1001.741	1001.827	57,250,896	57,511,120	0.009%	0.455%	0.113%	0.946%
12	Butler	959.95	960.594	55,645,606	49,687,832	0.067%	10.707%	-2.791%	1.692%
13	Calhoun	984.046	983.807	37,095,448	40,715,905	-0.024%	9.760%	2.355%	0.161%
14	Carroll	995.226	993.648	49,214,012	53,367,718	-0.159%	8.440%	2.046%	0.990%
15	Cass	894.983	892.978	22,700,961	22,351,564	-0.224%	-1.539%	-0.387%	0.955%
16	Cedar	953.319	951.858	52,878,725	59,644,096	-0.153%	12.794%	3.056%	2.708%
17	Cerro Gordo	956.269	950.365	75,489,368	75,915,291	-0.617%	0.564%	0.141%	2.538%
18	Cherokee	1001.817	1002.667	38,626,362	43,227,539	0.085%	11.912%	2.854%	0.998%
19	Chickasaw	840.921	840.201	39,953,562	42,196,008	-0.086%	5.613%	1.375%	1.045%
20	Clarke	659.493	657.838	13,388,643	15,035,283	-0.251%	12.299%	2.942%	0.990%
21	Clay	961.901	961.524	49,805,960	59,342,419	-0.039%	19.147%	4.477%	0.999%
22	Clayton	1078.985	1078.59	60,075,178	59,602,390	-0.037%	-0.787%	-0.197%	0.294%
23	Clinton	1014.92	1017.586	64,678,078	73,676,383	0.263%	13.912%	3.310%	2.155%
24	Crawford	1227.931	1225.253	33,808,043	35,489,184	-0.218%	4.973%	1.221%	0.669%
25	Dallas	894.828	885.675	64,535,712	69,835,797	-1.023%	8.213%	1.993%	0.983%
26	Davis	808.027	806.732	25,353,272	25,149,773	-0.160%	-0.803%	-0.201%	1.629%
27	Decatur	776.801	775.55	19,217,788	20,753,413	-0.161%	7.991%	1.940%	1.565%
28	Delaware	914.417	915.383	59,288,642	63,298,201	0.106%	6.763%	1.649%	2.453%
29	Des Moines	627.464	626.604	37,070,841	43,005,867	-0.137%	16.010%	3.782%	2.771%
30	Dickinson	652.37	649.554	43,090,960	48,354,946	-0.432%	12.216%	2.923%	0.987%
31	Dubuque	781.154	772.747	79,924,986	83,593,856	-1.076%	4.590%	1.128%	4.657%
32	Emmet	640.547	640.63	24,518,202	27,416,538	0.013%	11.821%	2.833%	0.996%
33	Fayette	1136.27	1135.199	61,784,477	60,178,234	-0.094%	-2.600%	-0.656%	1.175%
34	Floyd	872.824	880.884	44,646,119	53,241,536	0.923%	19.252%	4.500%	2.200%
35	Franklin	993.751	994.083	44,363,275	47,516,333	0.033%	7.107%	1.731%	0.997%
36	Fremont	753.786	753.689	25,907,189	26,580,586	-0.013%	2.599%	0.644%	1.014%
37	Greene	967.12	966.692	31,207,427	33,487,943	-0.044%	7.308%	1.779%	0.996%
38	Grundy	823.287	821.006	57,613,233	51,929,750	-0.277%	-9.865%	-2.563%	1.659%
39	Guthrie	943.664	942.864	26,097,942	27,175,547	-0.085%	4.129%	1.017%	0.993%
40	Hamilton	902.032	898.985	37,609,059	43,175,736	-0.338%	14.801%	3.511%	2.130%
41	Hancock	1010.874	1009.906	43,192,164	50,224,034	-0.096%	16.280%	3.843%	1.005%
42	Hardin	972.953	973.547	49,346,348	52,366,677	0.061%	6.121%	1.496%	0.948%
43	Harrison	1096.195	1095.24	30,484,311	33,536,394	-0.087%	10.012%	2.414%	0.991%
44	Henry	736.68	737.537	42,782,181	55,888,902	0.116%	30.636%	6.909%	0.873%
45	Howard	746.191	746.629	33,203,650	37,459,268	0.059%	12.817%	3.061%	0.220%
46	Humboldt	720.418	720.492	38,118,195	39,031,552	0.010%	2.396%	0.594%	1.000%
47	Ida	726.18	726.771	19,700,380	22,143,768	0.081%	12.403%	2.966%	0.993%
48	Iowa	943.953	941.903	50,955,214	58,296,961	-0.217%	14.408%	3.422%	1.033%
49	Jackson	830.125	829.948	39,007,944	40,855,367	-0.021%	4.736%	1.164%	2.805%
50	Jasper	1229.294	1233.952	72,485,535	90,600,351	0.379%	24.991%	5.735%	2.402%

Table 10d – Traffic Count concerns

County	CName	Miles		Annual VMT		9-Feb-03 Net change 98 ->02		chg rates vs. Avg in BR	
		1998	2002	1998	2002	Miles	VMT	Calc'd annl VMT change	Avg Annl VMT chg per DOT
51	Jefferson	749.785	749.539	40,079,194	40,011,255	-0.033%	-0.170%	-0.042%	1.641%
52	Johnson	919.456	911.876	89,151,369	111,021,673	-0.824%	24.532%	5.638%	3.571%
53	Jones	847.306	845.248	49,464,614	48,765,179	-0.243%	-1.414%	-0.355%	2.545%
54	Keokuk	924.272	925.001	32,704,027	30,501,047	0.079%	-6.736%	-1.728%	1.416%
55	Kossuth	1654.434	1653.799	66,491,462	66,656,518	-0.038%	0.248%	0.062%	0.998%
56	Lee	710.099	709.018	51,956,126	51,825,701	-0.152%	-0.251%	-0.063%	1.505%
57	Linn	1170.758	1158.878	159,430,480	180,932,726	-1.015%	13.487%	3.213%	3.774%
58	Louisa	574.393	574	28,571,474	35,880,486	-0.068%	25.582%	5.860%	4.332%
59	Lucas	631.526	629.294	19,502,667	19,431,619	-0.353%	-0.364%	-0.091%	2.005%
60	Lyon	975.099	980.972	38,714,340	49,335,655	0.602%	27.435%	6.248%	1.002%
61	Madison	909.85	910.024	36,148,688	45,149,879	0.019%	24.900%	5.716%	0.993%
62	Mahaska	972.109	970.653	33,923,295	35,858,414	-0.150%	5.704%	1.397%	2.022%
63	Marion	857.93	860.601	60,590,228	74,023,627	0.311%	22.171%	5.134%	3.866%
64	Marshall	928.108	926.993	65,052,098	69,763,043	-0.120%	7.242%	1.763%	0.360%
65	Mills	652.92	651.982	24,768,362	26,585,741	-0.144%	7.338%	1.786%	0.990%
66	Mitchell	774.293	774.323	39,037,865	41,582,992	0.004%	6.520%	1.592%	0.891%
67	Monona	1065.728	1061.189	34,965,042	39,301,337	-0.426%	12.402%	2.966%	0.995%
68	Monroe	626.964	625.075	15,872,584	15,839,951	-0.301%	-0.206%	-0.051%	1.805%
69	Montgomery	725.339	723.928	22,796,946	23,438,016	-0.195%	2.812%	0.696%	0.995%
70	Muscatine	618.069	616.725	49,191,656	56,378,518	-0.217%	14.610%	3.468%	2.717%
71	O'Brien	1024.999	1022.448	39,747,819	43,309,418	-0.249%	8.960%	2.169%	1.001%
72	Osceola	715.18	711.662	27,016,608	31,052,727	-0.492%	14.939%	3.542%	0.999%
73	Page	926.653	925.254	31,449,303	30,877,053	-0.151%	-1.820%	-0.458%	0.999%
74	Palo Alto	945.466	944.483	32,064,635	36,521,967	-0.104%	13.901%	3.308%	0.992%
75	Plymouth	1424.991	1423.44	62,496,322	76,194,149	-0.109%	21.918%	5.079%	0.874%
76	Pocahontas	1000.134	999.71	34,924,786	37,948,434	-0.042%	8.658%	2.097%	0.272%
77	Polk	762.23	761.57	166,748,595	184,945,071	-0.087%	10.913%	2.623%	6.044%
78	Pottawattamie	1434.509	1434.701	58,020,535	61,529,416	0.013%	6.048%	1.479%	1.042%
79	Poweshiek	969.889	970.041	30,102,588	33,185,102	0.016%	10.240%	2.467%	2.024%
80	Ringgold	899.476	900.608	19,568,692	19,880,158	0.126%	1.592%	0.396%	0.995%
81	Sac	1020.755	1020.444	37,581,331	41,381,803	-0.030%	10.113%	2.438%	0.978%
82	Scott	559.496	551.746	72,974,429	87,076,985	-1.385%	19.325%	4.516%	3.338%
83	Shelby	960.736	958.064	28,301,432	33,193,761	-0.278%	17.287%	4.067%	0.976%
84	Sioux	1355.484	1354.313	70,120,183	81,313,052	-0.086%	15.962%	3.772%	1.514%
85	Story	944.672	943.295	87,501,925	105,172,068	-0.146%	20.194%	4.706%	2.437%
86	Tama	1163.914	1162.369	46,205,113	47,500,989	-0.133%	2.805%	0.694%	1.936%
87	Taylor	919.53	917.127	16,687,630	16,456,570	-0.261%	-1.385%	-0.348%	0.991%
88	Union	697.799	700.14	23,538,368	25,951,887	0.335%	10.254%	2.470%	0.995%
89	Van Buren	743.366	739.345	22,853,300	26,777,868	-0.541%	17.173%	4.042%	0.473%
90	Wapello	711.919	711.813	46,747,393	52,210,934	-0.015%	11.687%	2.802%	3.006%
91	Warren	880.169	878.428	65,320,185	79,861,265	-0.198%	22.261%	5.153%	4.771%
92	Washington	910.283	907.387	50,684,331	50,696,067	-0.318%	0.023%	0.006%	2.191%
93	Wayne	835.647	835.91	22,802,304	22,805,590	0.031%	0.014%	0.004%	0.551%
94	Webster	1171.414	1173.353	95,518,680	115,519,024	0.166%	20.939%	4.868%	2.498%
95	Winnebago	708.943	711.378	27,966,962	30,210,115	0.343%	8.021%	1.948%	0.998%
96	Winneshiek	1056.508	1057.458	55,971,219	64,048,753	0.090%	14.432%	3.428%	0.769%
97	Woodbury	1333.197	1332.535	71,305,007	69,957,858	-0.050%	-1.889%	-0.476%	2.513%
98	Worth	682.362	682.717	34,059,650	34,325,106	0.052%	0.779%	0.194%	1.007%
99	Wright	959.515	959.809	41,178,734	47,365,269	0.031%	15.024%	3.561%	0.996%
State totals		91777.57	91678.96	4,597,538,316	5,024,956,737	-0.107%	9.297%	2.247%	

Table 11a – System Level Adequacy

Analysis of mileages in each B/C ratio zone

Traffic Band number		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
LOS #	Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771
	Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620
	Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.25	1557.24	2366.5	3549.11	5395.38	7341.16	11668.87
14	Paved - 4 lane - divided								0.2		0.4			0.3	0.1	0.6	0.1	0.9	0.5	
13	Paved - 4 lane							0.1					0.6	0.0	0.5	0.3	0.1	0.5	0.2	0.6
12	Paved - 3 lane		0.0	0.4	0.3		0.2	0.1	0.3	0.5	1.4	5.1	2.8	1.3	3.7	3.8	3.6	2.0	0.2	0.9
11	Paved - 2 lane - Level 3	0.4	14.6	13.6	17.4	26.9	37.4	121.3	390.3	676.3	1050.2	1252.7	881.3	530.0	268.8	90.1	21.7	17.8	3.3	0.2
10	Paved - 2 lane - Level 2	1.1	18.1	14.8	32.9	75.7	83.9	273.0	630.6	1152.9	1760.5	1989.8	1895.7	1108.1	575.5	224.0	81.1	37.8	15.5	3.2
9	Paved - 2 lane - Level 1		1.5	2.6	5.2	7.1	3.7	34.5	68.9	109.2	91.0	75.1	47.0	24.1	21.3	17.6	0.4			
8	Hard Surface - Level 2		1.2	2.4	7.6	17.4	9.7	35.5	52.7	35.8	21.7	18.7	22.0	5.1	5.9	1.0	1.2	0.1		
7	Hard Surface - Level 1	1.2	11.1	8.3	19.7	49.9	60.3	170.0	201.1	237.5	164.8	104.3	42.3	29.6	11.3	7.7	0.4	0.5		
6	Gravel - Level 3	4.2	93.8	278.4	695.3	972.6	820.2	917.7	457.3	186.9	50.4	20.0	17.8	1.8	0.2	0.5	0.5			
5	Gravel - Level 2	142.8	1893.5	4683.6	8147.4	7516.7	4376.7	3512.8	1377.3	495.6	127.0	39.3	13.6	11.2	3.5	1.1	0.3			
4	Gravel - Level 1	442.4	3767.9	5953.6	7712.6	5931.6	3016.2	2238.8	764.7	291.8	85.6	31.7	5.0	5.7	0.7		1.5			
3	Earth 2 lane	943.4	2113.4	903.5	342.3	128.7	50.2	29.7	14.4	11.6	1.2	1.2								
2	Earth 1 lane		4.1	0.1					0.2											
1	Unimproved	553.2	135.2	24.2	10.5	7.7	3.2	0.5	0.2		0.5									
		2088.721	8054.437	11885.222	16991.192	14734.204	8461.624	7333.990	3958.302	3197.919	3354.745	3537.802	2928.122	1717.266	891.491	346.709	111.018	59.638	19.608	4.953

Superior Service	592.15	46.45	41.98	50.58	0.00	37.61	0.23	0.53	0.45	1.75	0.00	3.45	1.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Adequate Service	1496.57	7872.75	11819.09	16930.15	14726.51	8420.81	7303.54	3178.26	2211.64	3088.23	3341.34	2888.34	1667.34	875.77	337.40	108.28	59.06	4.15	0.60	0.60
Upgrade justified	0.00	135.24	24.16	10.46	7.70	3.21	29.68	779.27	985.82	263.03	163.60	36.32	48.31	11.52	8.18	0.88	0.58	15.46	4.35	4.35
Upgrade urgent	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.24	0.00	1.73	32.86	0.00	0.00	4.20	1.13	1.87	0.00	0.00	0.00	0.00

Percent superior	28.3%	0.6%	0.4%	0.3%	0.0%	0.4%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Percent Adequate	71.7%	97.7%	99.4%	99.6%	99.9%	99.5%	99.6%	80.3%	69.2%	92.1%	94.4%	98.6%	97.1%	98.2%	97.3%	97.5%	99.0%	21.1%	12.2%	12.2%
Percent upgrade justfd	0.0%	1.7%	0.2%	0.1%	0.1%	0.0%	0.4%	19.7%	30.8%	7.8%	4.6%	1.2%	2.8%	1.3%	2.4%	0.8%	1.0%	78.9%	87.8%	87.8%
Percent upgrade urgnt	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.9%	0.0%	0.0%	0.5%	0.3%	1.7%	0.0%	0.0%	0.0%	0.0%

Summary of miles:

LOS		Exceeds need	OK	Upgrade justified	Upgrade urgent
14	Paved - 4 lane - divided	0.90	2.19	0	0
13	Paved - 4 lane	0.73	2.21	0.00	0
12	Paved - 3 lane	7.30	18.41	0.94	0
11	Paved - 2 lane - Level 3	83.33	5330.504	0.22	0
10	Paved - 2 lane - Level 2	66.88	9888.59	18.65	0.00
9	Paved - 2 lane - Level 1	4.02	505.16	0.00	0.00
8	Hard Surface - Level 2	3.59	234.40	0.09	0.00
7	Hard Surface - Level 1	20.59	945.63	153.75	0.00
6	Gravel - Level 3	4.22	4235.25	278.09	0.48
5	Gravel - Level 2	142.80	31508.10	686.70	4.97
4	Gravel - Level 1	442.45	28620.63	1152.69	33.91
3	Earth 2 lane	0	4481.44	55.68	2.40
2	Earth 1 lane	0	4.13	0.20	0.00
1	Unimproved	0	553.2	180.75	1.29
89677		776.8	86329.8	2527.8	43.0
		0.87%	96.27%	2.82%	0.05%

Table 11b : Annual Statewide Budget and Capital needs

Road agency cost to operate existing system / per year Uses the Road Agency UCT cost to operate road system table from the RN worksheet

Traffic Band number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Min VPD	0	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9771	
Max VPD	5	13	23	35	52	78	115	175	260	390	580	870	1300	1950	2920	4365	6530	9770	14620	
Mileage weighted Avg VPD	3.86	10	18.09	29.71	44.83	64.04	91.7	141.81	216.94	327.99	478.56	711.42	1063.25	1557.24	2366.5	3549.11	5395.38	7341.16	11668.87	
Paved - 4 lane - divided	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0
Paved - 4 lane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Paved - 3 lane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	1
Paved - 2 lane - Level 3	0.0	0.2	0.1	0.2	0.3	0.4	1.4	4.5	8.0	12.6	15.2	11	6.6	3.4	1.2	0.3	0.2	0.0	0.0	66
Paved - 2 lane - Level 2	0.0	0.2	0.1	0.3	0.7	0.8	2.7	6.4	11.8	18.3	21.0	20.3	12.0	6.3	2.5	0.9	0.4	0.2	0.0	105
Paved - 2 lane - Level 1	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.6	1.0	0.9	0.7	0.5	0.2	0.2	0.2	0.0	0.0	0.0	0.0	5
Hard Surface - Level 2	0.0	0.0	0.0	0.1	0.2	0.1	0.3	0.5	0.3	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	2
Hard Surface - Level 1	0.0	0.1	0.1	0.1	0.4	0.4	1.3	1.5	1.9	1.3	0.8	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	9
Gravel - Level 3	0.0	0.4	1.3	3.4	4.8	4.1	4.7	2.4	1.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23
Gravel - Level 2	0.5	7.2	18	32.1	30.1	17.8	14.5	5.8	2.1	0.6	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	129
Gravel - Level 1	1.5	12.7	20.5	27.0	21.1	10.9	8.2	2.9	1.1	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106
Earth 2 lane	1.7	3.9	1.7	0.7	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8
Earth 1 lane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Unimproved	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
	4.3	24.9	42.1	63.9	57.9	34.8	33.6	24.7	27.3	34.5	38.5	32.5	19.3	10.2	4.0	1.3	0.8	0.3	0.1	455

Table 11c : Cost of optimizing service

	Exceeds need	OK	Upgrade justified	Upgrade urgent
14 Paved - 4 lane - divided	0	0	0	0
13 Paved - 4 lane	0	0	0	0
12 Paved - 3 lane	1	1	1	0
11 Paved - 2 lane - Level 3	209	327	1	0
10 Paved - 2 lane - Level 2	114	1757	28	1
9 Paved - 2 lane - Level 1	8	48	4	0
8 Hard Surface - Level 2	0	10	1	0
7 Hard Surface - Level 1	2	113	30	0
6 Gravel - Level 3	0	219	14	0
5 Gravel - Level 2	0	1818	103	2
4 Gravel - Level 1	0	2188	173	7
3 Earth 2 lane	0	222	29	2
2 Earth 1 lane	0	16	3	0
1 Unimproved	0	26	4	0
9933	335	6746	392	12
\$Millions	4.48%	90.12%	5.24%	0.16%

Table 11d : Revenues vs. Costs

LOS#	LOS Description	Annual Cost	Million Annual VMT	Est. State & Fed RUTF generated	Local Effort	Annual Rev.	Net	Cummulative Net	Miles	Cummulative Miles	
14	Paved - 4 lane - divided	189,161	4.1	182,952	4,909	187,862	(1,300)	(1,300)	3.1	3	0.003%
13	Paved - 4 lane	129,179	4.9	221,061	4,657	225,718	96,539	95,240	2.9	6	0.007%
12	Paved - 3 lane	516,881	20.9	939,816	42,287	982,102	465,221	560,460	26.7	33	0.036%
11	Paved - 2 lane - Level 3	65,504,986	1162.0	52,291,200	8,590,366	60,881,566	(4,623,420)	(4,062,960)	5414.1	5,447	6.074%
10	Paved - 2 lane - Level 2	105,278,697	2372.5	106,760,298	15,825,719	122,586,016	17,307,320	13,244,360	9974.1	15,421	17.196%
9	Paved - 2 lane - Level 1	4,918,989	87.2	3,922,546	807,898	4,730,445	(188,544)	13,055,816	509.2	15,930	17.764%
8	Hard Surface - Level 2	2,261,255	26.9	1,209,929	377,748	1,587,677	(673,579)	12,382,237	238.1	16,168	18.029%
7	Hard Surface - Level 1	8,700,867	112.4	5,057,695	1,777,017	6,834,712	(1,866,155)	10,516,083	1120.0	17,288	19.278%
6	Gravel - Level 3	22,767,922	130.0	5,851,540	7,167,911	13,019,451	(9,748,471)	767,611	4517.6	21,806	24.316%
5	Gravel - Level 2	129,275,457	613.2	27,592,156	51,317,250	78,909,405	(50,366,052)	(49,598,441)	32342.6	54,148	60.381%
4	Gravel - Level 1	106,389,217	464.1	20,886,292	47,996,488	68,882,780	(37,506,437)	(87,104,878)	30249.7	84,398	94.113%
3	Earth 2 lane	8,400,455	25.0	1,125,352	7,202,759	8,328,111	(72,344)	(87,177,222)	4539.5	88,937	99.175%
2	Earth 1 lane	5,139	0.0	1,149	6,873	8,022	2,883	(87,174,338)	4.3	88,942	99.180%
1	Unimproved	788,998	1.8	82,718	1,166,570	1,249,288	460,290	(86,714,048)	735.2	89,677	100.000%
		455,127,204	5025.0	226,124,703	142,288,453	368,413,156	(86,714,048)		89677.0		

Rural Basic limit 3.00375
 Est. amt if Rural Basic had been index to inflation: 4.92199 (20 years / 2.5% APR)
 Net extra Local Effort that would be available: 90,867,745

Table 12a : Service Adequacy by County

CName	Adequate	XcndsCmntNd	Adq+Xcnds	Upgrade	Urgent	Upg+Urgt
Johnson	86.34%	0.00%	86.34%	13.40%	0.26%	13.66%
Des Moines	86.88%	0.04%	86.92%	12.90%	0.19%	13.08%
Linn	88.20%	0.50%	88.70%	11.12%	0.19%	11.30%
Warren	88.23%	0.77%	89.00%	10.98%	0.02%	11.00%
Lee	88.64%	0.62%	89.26%	10.66%	0.08%	10.74%
Wapello	90.23%	0.07%	90.30%	9.63%	0.07%	9.70%
Henry	90.33%	0.21%	90.54%	9.22%	0.24%	9.46%
Marion	90.98%	0.29%	91.27%	8.35%	0.38%	8.73%
Scott	91.70%	0.72%	92.42%	7.58%	0.00%	7.58%
Dubuque	91.86%	1.08%	92.94%	7.06%	0.00%	7.06%
Jasper	93.49%	0.22%	93.71%	6.12%	0.17%	6.29%
Cedar	92.12%	1.63%	93.75%	6.13%	0.12%	6.25%
Clayton	93.75%	0.24%	93.99%	5.97%	0.04%	6.01%
Mills	91.41%	2.62%	94.04%	5.52%	0.45%	5.96%
Madison	92.89%	1.26%	94.15%	5.82%	0.03%	5.85%
Pottawattamie	91.93%	2.34%	94.27%	5.58%	0.15%	5.73%
Bremer	94.33%	0.21%	94.54%	5.46%	0.00%	5.46%
Shelby	94.45%	0.65%	95.10%	4.73%	0.17%	4.90%
Black Hawk	94.90%	0.32%	95.22%	4.76%	0.02%	4.78%
Washington	95.20%	0.19%	95.39%	4.61%	0.00%	4.61%
Jackson	94.47%	0.94%	95.42%	4.51%	0.08%	4.58%
Allamakee	89.61%	5.84%	95.45%	4.41%	0.14%	4.55%
Louisa	95.45%	0.06%	95.51%	4.48%	0.01%	4.49%
Hancock	94.82%	1.12%	95.94%	3.48%	0.59%	4.06%
Winneshiek	95.40%	0.58%	95.98%	4.02%	0.00%	4.02%
Keokuk	93.13%	2.92%	96.05%	3.95%	0.00%	3.95%
Appanoose	94.73%	1.44%	96.17%	3.75%	0.08%	3.84%
Dallas	95.68%	0.60%	96.28%	3.72%	0.00%	3.72%
Muscatine	96.08%	0.24%	96.32%	3.56%	0.12%	3.68%
Davis	96.06%	0.31%	96.36%	3.64%	0.00%	3.64%
Mahaska	93.75%	2.66%	96.42%	3.53%	0.05%	3.58%
Lucas	96.58%	0.02%	96.59%	3.41%	0.00%	3.41%
Marshall	96.59%	0.04%	96.63%	3.37%	0.00%	3.37%
Benton	96.69%	0.01%	96.70%	3.13%	0.17%	3.30%
Jefferson	95.75%	0.95%	96.70%	3.30%	0.00%	3.30%
Jones	96.57%	0.15%	96.72%	3.28%	0.00%	3.28%
Story	96.69%	0.15%	96.84%	3.17%	0.00%	3.17%
Delaware	96.44%	0.88%	97.31%	2.69%	0.00%	2.69%
Tama	96.80%	0.64%	97.44%	2.56%	0.00%	2.56%
Monroe	96.97%	0.47%	97.44%	2.56%	0.00%	2.56%
Buchanan	97.39%	0.07%	97.45%	2.42%	0.12%	2.55%
Iowa	96.65%	0.90%	97.55%	2.41%	0.03%	2.45%
Harrison	95.38%	2.23%	97.61%	2.39%	0.00%	2.39%
Polk	94.64%	2.99%	97.64%	2.36%	0.00%	2.36%
Van Buren	97.18%	0.47%	97.65%	2.33%	0.02%	2.35%
Woodbury	96.13%	1.64%	97.77%	2.19%	0.04%	2.23%
Clinton	97.43%	0.45%	97.88%	2.12%	0.00%	2.12%
Crawford	97.24%	0.72%	97.96%	2.03%	0.00%	2.04%
Chickasaw	98.17%	0.00%	98.17%	1.83%	0.00%	1.83%
Dickinson	96.60%	1.67%	98.27%	1.73%	0.00%	1.73%

Table 12a : Service Adequacy By County, cont.

CName	Adequate	XcndsCrntNd	Adq+Xcnds	Upgrade	Urgent	Upg+Urgt
Plymouth	97.84%	0.43%	98.27%	1.73%	0.00%	1.73%
Hardin	98.26%	0.02%	98.27%	1.64%	0.09%	1.73%
Winnebago	97.32%	0.98%	98.30%	1.70%	0.00%	1.70%
Sioux	98.31%	0.02%	98.33%	1.63%	0.04%	1.67%
Monona	95.56%	2.82%	98.38%	1.62%	0.00%	1.62%
Union	96.41%	2.02%	98.43%	1.57%	0.00%	1.57%
Grundy	98.48%	0.08%	98.56%	1.44%	0.00%	1.44%
Carroll	98.46%	0.13%	98.59%	1.41%	0.00%	1.41%
Kossuth	96.73%	1.87%	98.60%	1.40%	0.01%	1.40%
Calhoun	97.80%	0.98%	98.78%	1.07%	0.15%	1.22%
Franklin	98.52%	0.30%	98.81%	1.19%	0.00%	1.19%
Ringgold	97.78%	1.13%	98.91%	1.09%	0.00%	1.09%
Montgomery	98.55%	0.38%	98.93%	1.07%	0.00%	1.07%
Mitchell	98.84%	0.10%	98.94%	1.06%	0.00%	1.06%
Page	98.10%	0.93%	99.03%	0.97%	0.00%	0.97%
Fremont	97.54%	1.51%	99.06%	0.94%	0.00%	0.94%
Poweshiek	97.79%	1.27%	99.06%	0.94%	0.00%	0.94%
Cerro Gordo	98.52%	0.56%	99.08%	0.90%	0.02%	0.92%
Boone	98.71%	0.37%	99.08%	0.82%	0.10%	0.92%
Ida	97.98%	1.14%	99.12%	0.88%	0.00%	0.88%
Guthrie	99.03%	0.13%	99.16%	0.84%	0.00%	0.84%
Fayette	98.57%	0.67%	99.24%	0.76%	0.00%	0.76%
Cherokee	98.78%	0.49%	99.27%	0.73%	0.00%	0.73%
Clay	97.40%	1.88%	99.28%	0.72%	0.00%	0.72%
Hamilton	97.79%	1.51%	99.29%	0.71%	0.00%	0.71%
Wayne	97.70%	1.61%	99.31%	0.69%	0.00%	0.69%
Clarke	98.85%	0.47%	99.32%	0.68%	0.00%	0.68%
Buena Vista	99.30%	0.06%	99.36%	0.64%	0.00%	0.64%
Webster	98.55%	0.81%	99.37%	0.61%	0.03%	0.63%
Lyon	98.95%	0.44%	99.38%	0.62%	0.00%	0.62%
Butler	99.33%	0.07%	99.40%	0.60%	0.00%	0.60%
Palo Alto	97.83%	1.59%	99.42%	0.58%	0.00%	0.58%
Emmet	98.96%	0.47%	99.43%	0.55%	0.02%	0.57%
Wright	98.84%	0.61%	99.45%	0.45%	0.10%	0.55%
Pocahontas	98.77%	0.71%	99.48%	0.52%	0.00%	0.52%
Howard	99.56%	0.00%	99.56%	0.44%	0.00%	0.44%
Adair	98.94%	0.63%	99.57%	0.43%	0.00%	0.43%
O'Brien	98.38%	1.21%	99.59%	0.41%	0.00%	0.41%
Sac	99.36%	0.25%	99.61%	0.39%	0.00%	0.39%
Decatur	97.78%	1.83%	99.61%	0.39%	0.00%	0.39%
Audubon	99.41%	0.26%	99.67%	0.32%	0.01%	0.33%
Floyd	99.33%	0.36%	99.69%	0.31%	0.00%	0.31%
Adams	98.78%	0.95%	99.73%	0.27%	0.00%	0.27%
Cass	98.51%	1.23%	99.74%	0.26%	0.00%	0.26%
Greene	99.26%	0.53%	99.79%	0.21%	0.00%	0.21%
Humboldt	98.96%	0.87%	99.82%	0.18%	0.00%	0.18%
Taylor	98.90%	0.95%	99.84%	0.15%	0.01%	0.15%
Osceola	98.32%	1.53%	99.85%	0.15%	0.00%	0.15%
Worth	99.88%	0.01%	99.90%	0.10%	0.00%	0.10%
	96.21%	0.85%	97.06%	2.90%	0.05%	2.94%

Table 12b : Annual Budget Needs:

CO	COname	Annual budget suggested by TCT				Admin. & Engineering	Roadway Maintenance	General Roadway	Local Construction	Local Total	FM Funds	BR Funds	Total Expended	
		AE	OMR	DEP	Total									
1	Adair	326,873	1,716,679	1,504,025	3,547,577	320,902	1,754,501	976,123	30,820	3,082,346	640,066	390,000	4,112,412	116%
2	Adams	254,277	1,225,851	1,052,023	2,532,151	154,530	1,149,902	570,484	91,044	1,965,960	452,794	279,000	2,697,754	107%
3	Allamakee	349,824	1,653,318	1,482,810	3,485,952	306,592	1,526,847	1,225,993	603,590	3,663,022	869,060	218,000	4,750,082	136%
4	Appanoose	263,642	1,304,215	1,168,422	2,736,279	295,859	1,176,400	624,028	1,015	2,097,302	595,443	245,000	2,937,745	107%
5	Audubon	267,292	1,393,393	1,254,111	2,914,796	250,150	1,143,206	745,290	20,264	2,158,910	541,688	265,000	2,965,598	102%
6	Benton	482,715	2,260,302	2,017,581	4,760,598	350,777	2,481,960	1,182,714	299,868	4,315,319	1,180,372	285,000	5,780,691	121%
7	Black Hawk	442,863	1,759,069	1,591,290	3,793,222	732,296	2,452,010	1,042,067	248,428	4,474,801	1,105,810	416,000	5,996,611	158%
8	Boone	407,166	1,978,112	1,806,375	4,191,653	356,642	1,951,929	1,454,368	474,737	4,237,676	955,974	258,000	5,451,650	130%
9	Bremer	307,789	1,381,660	1,251,603	2,941,052	300,562	1,615,748	1,009,673	676,395	3,602,378	603,656	301,000	4,507,034	153%
10	Buchanan	371,916	1,888,374	1,709,588	3,969,877	369,129	1,935,204	1,143,983	62,841	3,511,157	758,773	282,000	4,551,930	115%
11	Buena Vista	501,462	2,095,176	1,900,546	4,497,183	290,937	1,526,487	1,016,845	280,944	3,115,213	744,872	142,000	4,002,085	89%
12	Butler	473,214	2,136,578	1,943,921	4,553,713	349,067	1,945,166	1,074,270	197,532	3,566,035	1,073,049	484,000	5,123,084	113%
13	Calhoun	402,538	1,994,584	1,825,974	4,223,096	319,380	1,506,583	1,213,775	91,465	3,131,203	659,751	123,000	3,913,954	93%
14	Carroll	411,005	1,932,036	1,757,667	4,100,708	340,705	1,971,608	1,195,458	429,904	3,937,675	764,708	248,000	4,950,383	121%
15	Cass	301,441	1,505,572	1,306,333	3,113,346	350,440	1,544,264	1,266,253	277,405	3,438,362	555,134	274,000	4,267,496	137%
16	Cedar	358,795	1,727,781	1,532,523	3,619,100	388,766	2,297,454	1,206,593	480,302	4,373,115	921,854	386,000	5,680,969	157%
17	Cerro Gordo	490,502	2,194,956	1,997,405	4,682,864	325,208	2,436,219	1,274,401	271,901	4,307,729	509,265	110,000	4,926,994	105%
18	Cherokee	436,639	2,074,954	1,883,173	4,394,766	406,595	1,215,352	862,873	1,227,801	3,712,621	945,141	209,000	4,866,762	111%
19	Chickasaw	341,987	1,605,756	1,454,443	3,402,185	276,832	2,207,443	853,975	383,851	3,722,101	548,115	217,000	4,487,216	132%
20	Clarke	188,296	1,035,848	905,962	2,130,107	270,867	1,080,551	558,872	52,795	1,963,085	597,911	168,000	2,728,996	128%
21	Clay	457,337	1,981,135	1,808,693	4,247,165	413,851	1,268,138	1,362,496	819,480	3,863,965	810,330	173,000	4,847,295	114%
22	Clayton	424,287	2,098,898	1,890,554	4,413,739	349,370	2,430,220	1,166,353	1,350,582	5,296,525	1,228,473	335,000	6,859,998	155%
23	Clinton	456,382	2,101,304	1,913,674	4,471,360	406,281	2,230,843	1,403,230	245,709	4,286,063	916,826	242,000	5,444,889	122%
24	Crawford	405,109	2,069,154	1,791,544	4,265,806	484,275	2,018,568	1,510,042	481,457	4,494,342	837,179	475,000	5,806,521	136%
25	Dallas	394,479	1,941,886	1,774,294	4,110,658	508,927	2,211,254	1,411,784	943,770	5,075,735	817,248	191,000	6,083,983	148%
26	Davis	266,590	1,336,245	1,183,668	2,786,503	318,160	1,293,899	715,514	296,644	2,624,217	696,418	355,000	3,675,635	132%
27	Decatur	300,772	1,439,991	1,266,655	3,007,418	254,571	1,238,437	648,570	95,925	2,237,503	744,524	163,000	3,145,027	105%
28	Delaware	436,009	1,955,755	1,765,732	4,157,497	486,846	3,308,984	1,052,716	721,682	5,570,228	820,407	259,000	6,649,635	160%
29	Des Moines	235,089	1,128,432	987,958	2,351,479	527,214	2,226,065	950,737	346,264	4,050,280	777,263	123,000	4,950,543	211%
30	Dickinson	327,437	1,415,301	1,272,994	3,015,732	347,534	1,255,072	496,834	1,420,879	3,520,319	469,468	106,000	4,095,787	136%
31	Dubuque	482,518	1,932,991	1,760,110	4,175,619	587,475	3,460,847	1,001,232	437,373	5,486,927	1,045,915	268,000	6,800,842	163%
32	Emmet	349,784	1,387,028	1,257,362	2,994,175	259,768	971,536	800,082	218,753	2,250,139	474,534	89,000	2,813,673	94%
33	Fayette	498,171	2,290,532	2,088,384	4,877,087	515,595	1,845,549	1,623,357	97,078	4,081,579	901,401	315,000	5,297,980	109%
34	Floyd	390,095	1,821,196	1,664,097	3,875,387	276,576	(488,086)	1,491,491	3,525	1,283,506	524,260	184,000	1,991,766	51%
35	Franklin	441,051	1,986,929	1,811,317	4,239,297	326,777	1,791,360	823,887	144,474	3,086,498	594,564	225,000	3,906,062	92%
36	Fremont	279,058	1,350,101	1,162,760	2,791,919	315,295	1,635,702	820,219	147,455	2,918,671	820,451	111,000	3,850,122	138%
37	Greene	437,560	2,089,800	1,902,406	4,429,765	430,773	854,610	1,565,120	709,913	3,560,416	669,291	161,000	4,390,707	99%
38	Grundy	388,662	1,723,220	1,572,074	3,683,957	291,054	1,979,413	1,078,157	1,028,880	4,377,504	926,453	281,000	5,584,957	152%
39	Guthrie	329,346	1,659,005	1,473,686	3,462,037	306,901	1,508,120	628,730	21,602	2,465,353	699,873	224,000	3,389,226	98%
40	Hamilton	402,316	1,748,781	1,577,685	3,728,781	364,237	1,995,320	1,079,113	23,441	3,462,111	828,268	187,000	4,477,379	120%
41	Hancock	492,985	2,050,508	1,850,035	4,393,528	329,075	1,602,866	1,289,222	462,597	3,683,760	643,615	108,000	4,435,375	101%
42	Hardin	422,488	1,957,951	1,789,404	4,169,843	383,381	1,754,390	1,391,316	291,626	3,820,713	789,839	182,000	4,792,552	115%
43	Harrison	363,550	1,844,234	1,608,458	3,816,242	348,086	2,695,240	1,450,073	76,601	4,570,000	1,008,906	322,000	5,900,906	155%
44	Henry	288,306	1,353,938	1,188,651	2,830,895	302,522	1,483,518	819,516	347,688	2,953,244	608,616	223,000	3,784,860	134%
45	Howard	305,068	1,448,670	1,329,401	3,083,139	220,825	1,328,866	709,830	240,595	2,500,116	471,480	142,000	3,113,596	101%
46	Humboldt	402,683	1,614,996	1,471,059	3,488,738	224,309	848,106	412,808	447,600	1,932,823	403,216	139,000	2,475,039	71%
47	Ida	297,589	1,423,366	1,276,500	2,997,455	273,054	1,010,098	514,979	255,179	2,053,310	467,450	119,000	2,639,760	88%
48	Iowa	369,328	1,826,122	1,623,196	3,818,647	409,224	2,109,625	1,013,661	611,744	4,144,254	684,217	374,000	5,202,471	136%
49	Jackson	347,269	1,678,254	1,500,963	3,526,485	469,368	2,515,970	1,006,075	266,167	4,257,580	1,018,867	299,000	5,575,447	158%
50	Jasper	476,074	2,308,077	2,064,883	4,849,034	404,394	2,525,560	1,154,596	519,095	4,603,645	1,126,235	374,000	6,103,880	126%
51	Jefferson	299,536	1,403,837	1,212,870	2,916,244	246,453	1,438,246	569,476	303,192	2,557,367	592,100	230,000	3,379,467	116%

TR-477 Source data & Result tables

Table 12b : Budget needs

52	Johnson	439,411	1,904,010	1,715,975	4,059,395	640,943	3,364,612	1,430,865	1,018,452	6,454,872	1,263,167	228,000	7,946,039	196%
53	Jones	344,920	1,728,412	1,555,860	3,629,192	591,388	1,714,681	850,215	401,961	3,558,245	1,034,022	350,000	4,942,267	136%
54	Keokuk	293,668	1,572,278	1,367,758	3,233,704	352,700	1,581,897	765,374	110,928	2,810,899	792,007	378,000	3,980,906	123%
55	Kossuth	926,245	3,530,343	3,161,162	7,617,750	482,087	2,504,524	1,538,222	1,721,244	6,246,077	1,130,413	277,000	7,653,490	100%
56	Lee	313,114	1,455,003	1,316,662	3,084,779	498,269	1,944,351	965,594	245,448	3,653,662	878,388	223,000	4,755,050	154%
57	Linn	573,366	2,519,149	2,281,638	5,374,152	710,151	3,875,975	1,989,696	877,228	7,453,050	1,215,031	369,000	9,037,081	168%
58	Louisa	251,291	1,220,170	1,093,199	2,564,660	329,020	1,296,314	601,492	1,201,687	3,428,513	571,590	79,000	4,079,103	159%
59	Lucas	187,823	1,013,504	876,289	2,077,616	242,687	1,270,880	431,477	38,234	1,983,278	472,225	332,000	2,787,503	134%
60	Lyon	497,014	2,037,431	1,847,789	4,382,234	501,959	991,701	1,485,051	224,273	3,202,984	594,742	315,000	4,112,726	94%
61	Madison	320,222	1,668,220	1,499,317	3,487,759	407,674	1,678,819	1,321,566	52,696	3,460,755	838,494	288,000	4,587,249	132%
62	Mahaska	324,047	1,700,866	1,536,259	3,561,172	369,262	1,878,663	1,077,978	314,967	3,640,870	766,471	266,000	4,673,341	131%
63	Marion	333,537	1,641,344	1,467,602	3,442,484	384,696	2,321,649	1,133,573	4,669	3,844,587	913,670	335,000	5,093,257	148%
64	Marshall	420,518	1,827,534	1,640,963	3,889,015	467,175	1,993,326	1,100,360	428,018	3,988,879	828,345	366,000	5,183,224	133%
65	Mills	243,970	1,183,479	1,041,337	2,468,787	289,506	1,936,514	842,081	24,734	3,092,835	673,369	305,000	4,071,204	165%
66	Mitchell	368,679	1,653,785	1,503,020	3,525,484	178,084	1,384,514	766,972	625,337	2,954,907	626,342	166,000	3,747,249	106%
67	Monona	438,636	2,034,634	1,805,086	4,278,355	232,203	2,021,887	851,452	255,797	3,361,339	835,397	517,000	4,713,736	110%
68	Monroe	184,658	1,033,042	925,094	2,142,794	372,205	1,023,155	988,891	36,055	2,420,306	607,510	228,000	3,255,816	152%
69	Montgomery	269,881	1,268,358	1,096,365	2,634,604	298,839	1,336,181	642,132	52,041	2,329,193	551,856	321,000	3,202,049	122%
70	Muscatine	300,812	1,356,946	1,230,422	2,888,180	350,006	2,018,882	955,323	306,614	3,630,825	572,846	218,000	4,421,671	153%
71	O'Brien	465,038	1,964,671	1,747,815	4,177,524	291,873	1,555,073	884,489	371,879	3,103,314	481,998	197,000	3,782,312	91%
72	Osceola	338,676	1,474,486	1,313,286	3,126,448	188,392	834,974	649,004	175,378	1,847,748	403,656	100,000	2,351,404	75%
73	Page	350,862	1,671,439	1,443,010	3,465,311	338,166	1,981,083	911,170	928,479	4,158,898	847,588	324,000	5,330,486	154%
74	Palo Alto	384,751	1,923,357	1,758,040	4,066,148	262,927	1,081,696	936,857	124,888	2,406,368	555,534	84,000	3,045,902	75%
75	Plymouth	701,064	3,003,182	2,708,504	6,412,750	501,322	2,302,224	1,123,130	887,535	4,814,211	1,130,962	531,000	6,476,173	101%
76	Pocahontas	406,731	1,940,301	1,754,611	4,101,642	229,315	1,393,079	921,508	200,344	2,744,246	893,177	123,000	3,760,423	92%
77	Polk	709,332	2,358,101	2,128,600	5,196,033	1,166,661	4,122,907	1,450,947	2,339,662	9,080,177	1,709,303	287,000	11,076,480	213%
78	Pottawattamie	508,188	2,600,392	2,331,069	5,439,649	946,826	4,240,187	2,258,465	2,498,968	9,944,446	1,464,724	596,000	12,005,170	221%
79	Poweshiek	320,158	1,665,010	1,458,740	3,443,907	337,622	1,919,726	1,216,714	55,185	3,529,247	756,122	311,000	4,596,369	133%
80	Ringgold	305,277	1,470,246	1,235,989	3,011,512	281,975	1,271,667	786,025	5,113	2,344,780	605,918	228,000	3,178,698	106%
81	Sac	433,023	2,022,611	1,831,652	4,287,285	241,873	1,308,889	1,103,343	518,588	3,172,693	699,588	160,000	4,032,281	94%
82	Scott	372,977	1,406,876	1,273,226	3,053,079	469,174	1,891,627	998,680	1,088,365	4,447,846	571,939	129,000	5,148,785	169%
83	Shelby	323,706	1,569,080	1,318,139	3,210,925	271,135	1,797,514	868,914	454,961	3,392,524	727,148	470,000	4,589,672	143%
84	Sioux	604,669	2,697,834	2,442,236	5,744,739	407,894	2,031,495	1,434,737	1,193,732	5,067,858	999,363	314,000	6,381,221	111%
85	Story	492,838	2,066,651	1,877,636	4,437,125	451,681	2,406,090	983,243	20,047	3,861,061	902,250	285,000	5,048,311	114%
86	Tama	436,625	2,034,379	1,797,950	4,268,954	428,734	2,317,122	1,358,980	-	4,104,836	876,710	394,000	5,375,546	126%
87	Taylor	284,204	1,477,677	1,260,613	3,022,494	273,175	1,473,247	676,722	406,978	2,830,122	592,085	184,000	3,606,207	119%
88	Union	240,263	1,236,345	1,074,193	2,550,802	269,928	1,311,358	369,570	194,291	2,145,147	584,998	184,000	2,914,145	114%
89	Van Buren	259,701	1,257,199	1,119,648	2,636,548	367,763	892,245	610,791	349,621	2,220,420	653,446	315,000	3,188,866	121%
90	Wapello	301,726	1,393,241	1,244,907	2,939,874	574,394	1,788,003	919,626	807,214	4,089,237	792,219	289,000	5,170,456	176%
91	Warren	356,150	1,750,216	1,545,475	3,651,841	509,390	2,503,927	1,153,691	545,669	4,712,677	897,452	442,000	6,052,129	166%
92	Washington	332,458	1,678,823	1,480,955	3,492,237	445,223	1,719,541	1,187,306	505,919	3,857,989	820,771	295,000	4,973,760	142%
93	Wayne	287,232	1,508,188	1,339,515	3,134,935	281,731	1,007,448	648,415	200,140	2,137,734	526,388	196,000	2,860,122	91%
94	Webster	598,356	2,545,827	2,321,625	5,465,808	468,971	2,504,355	1,595,533	530,948	5,099,807	926,339	239,000	6,265,146	115%
95	Winnebago	307,871	1,344,665	1,211,218	2,863,754	193,723	935,011	1,160,289	70,073	2,359,096	539,273	82,000	2,980,369	104%
96	Winneshiek	455,686	2,077,246	1,878,865	4,411,797	372,401	1,941,429	1,119,135	2,038,860	5,471,825	1,068,213	509,000	7,049,038	160%
97	Woodbury	630,393	2,739,636	2,454,346	5,824,375	637,953	2,802,644	1,812,716	1,500,666	6,753,979	1,339,392	568,000	8,661,371	149%
98	Worth	379,291	1,505,896	1,365,692	3,250,879	173,802	911,963	776,443	292,091	2,154,299	522,150	91,000	2,767,449	85%
99	Wright	401,144	1,829,233	1,663,217	3,893,594	239,084	1,952,701	938,554	408,762	3,539,101	582,459	233,000	4,354,560	112%

Table 12c : Upgrade needs by County

CO	CName	Roads	Bridges	UpgrdCost
1	Adair	756,046	-	756,046
2	Adams	154,519	-	154,519
3	Allamakee	6,120,464	601,410	6,721,874
4	Appanoose	4,511,283	195,915	4,707,198
5	Audubon	438,201	-	438,201
6	Benton	7,561,063	299,730	7,860,793
7	Black Hawk	5,917,256	1,049,108	6,966,363
8	Boone	2,159,642	-	2,159,642
9	Bremer	6,112,906	320,400	6,433,306
10	Buchanan	4,113,999	868,988	4,982,986
11	Buena Vista	622,332	-	622,332
12	Butler	858,247	330,300	1,188,547
13	Calhoun	1,805,421	14,175	1,819,596
14	Carroll	2,109,369	298,245	2,407,614
15	Cass	432,554	-	432,554
16	Cedar	8,814,971	495,405	9,310,376
17	Cerro Gordo	724,855	-	724,855
18	Cherokee	1,170,868	85,830	1,256,698
19	Chickasaw	2,176,556	208,095	2,384,651
20	Clarke	692,534	-	692,534
21	Clay	953,666	-	953,666
22	Clayton	8,957,190	759,585	9,716,775
23	Clinton	2,809,517	3,465	2,812,982
24	Crawford	4,515,288	899,535	5,414,823
25	Dallas	6,818,217	636,263	7,454,479
26	Davis	4,575,539	188,550	4,764,089
27	Decatur	240,748	-	240,748
28	Delaware	3,684,807	74,430	3,759,237
29	Des Moines	13,039,284	165,518	13,204,801
30	Dickinson	1,827,862	74,828	1,902,690
31	Dubuque	10,312,143	832,551	11,144,694
32	Emmet	300,918	16,380	317,298
33	Fayette	1,565,728	118,628	1,684,355
34	Floyd	393,462	-	393,462
35	Franklin	1,400,223	219,840	1,620,063
36	Fremont	1,035,789	15,000	1,050,789
37	Greene	484,004	24,510	508,514
38	Grundy	834,905	70,635	905,540
39	Guthrie	1,367,048	-	1,367,048
40	Hamilton	1,148,034	43,590	1,191,624
41	Hancock	8,037,502	129,968	8,167,470
42	Hardin	3,099,261	109,830	3,209,091
43	Harrison	4,579,251	517,088	5,096,338
44	Henry	12,395,466	876,293	13,271,759
45	Howard	841,382	-	841,382
46	Humboldt	203,048	-	203,048
47	Ida	305,442	-	305,442
48	Iowa	4,389,526	322,628	4,712,153
49	Jackson	6,620,852	205,515	6,826,367
50	Jasper	15,961,579	1,177,335	17,138,914

CO	CName	Roads	Bridges	UpgrdCost
51	Jefferson	4,162,679	132,225	4,294,904
52	Johnson	24,677,594	1,191,743	25,869,337
53	Jones	3,865,981	474,428	4,340,408
54	Keokuk	5,590,409	1,037,655	6,628,064
55	Kossuth	973,469	-	973,469
56	Lee	13,760,306	689,348	14,449,653
57	Linn	25,775,067	3,444,713	29,219,780
58	Louisa	4,658,449	267,285	4,925,734
59	Lucas	3,745,912	318,075	4,063,987
60	Lyon	862,364	-	862,364
61	Madison	8,752,906	1,000,028	9,752,933
62	Mahaska	5,925,048	569,685	6,494,733
63	Marion	14,673,210	1,304,003	15,977,212
64	Marshall	6,000,498	314,205	6,314,703
65	Mills	6,280,662	575,745	6,856,407
66	Mitchell	1,291,304	99,458	1,390,762
67	Monona	1,046,475	-	1,046,475
68	Monroe	2,246,621	12,600	2,259,221
69	Montgomery	1,574,583	102,150	1,676,733
70	Muscatine	4,465,904	49,050	4,514,954
71	O'Brien	1,127,255	-	1,127,255
72	Osceola	12,705	-	12,705
73	Page	1,134,902	945,833	2,080,734
74	Palo Alto	930,479	69,000	999,479
75	Plymouth	4,948,886	128,610	5,077,496
76	Pocahontas	426,256	-	426,256
77	Polk	6,694,412	-	6,694,412
78	Pottawattamie	17,290,126	795,098	18,085,224
79	Poweshiek	1,085,992	-	1,085,992
80	Ringgold	636,620	186,383	823,003
81	Sac	503,355	-	503,355
82	Scott	6,980,083	193,073	7,173,155
83	Shelby	9,028,113	907,267	9,935,379
84	Sioux	4,431,212	1,106,483	5,537,694
85	Story	6,449,202	661,568	7,110,770
86	Tama	4,406,089	807,563	5,213,652
87	Taylor	45,944	-	45,944
88	Union	1,272,501	57,150	1,329,651
89	Van Buren	3,189,127	220,613	3,409,739
90	Wapello	13,078,615	476,085	13,554,700
91	Warren	17,480,487	1,048,073	18,528,560
92	Washington	6,666,886	770,895	7,437,781
93	Wayne	1,365,602	62,475	1,428,077
94	Webster	2,000,527	78,540	2,079,067
95	Winnebago	720,026	-	720,026
96	Winneshiek	6,707,858	377,858	7,085,715
97	Woodbury	4,504,271	284,738	4,789,009
99	Wright	1,098,792	58,433	1,157,225

Table 13a : Road miles needing upgrade by road class

CO	CName	Local	FM	FM-FAS	FM-FAS+	Total
1	Adair	4.445				4.445
2	Adams	0.647	0.18			0.827
3	Allamakee	15.279	11.516	6.315		33.11
4	Appanoose	7.118	12.295	5.554	0.149	25.116
5	Audubon	0.739	0.752	1.001		2.492
6	Benton	31.663	9.423	0.479		41.565
7	Black Hawk	22.761	4.859	2.742		30.362
8	Boone	6.901	0.733	0.062	0.143	7.839
9	Bremer	22.639	10.933		0.118	33.69
10	Buchanan	12.385	8.718	0.616	0.796	22.515
11	Buena Vista	2.361	0.752	0.491		3.604
12	Butler	3.251	1.877	0.062		5.19
13	Calhoun	5.493	4.04			9.533
14	Carroll	7.908	3.213			11.121
15	Cass	2.238		0.037		2.275
16	Cedar	5.689	32.386	10.157		48.232
17	Cerro Gordo	4.156				4.156
18	Cherokee	3.927	1.995	0.497		6.419
19	Chickasaw	7.428	1.84			9.268
20	Clarke	1.815	0.994	1.001		3.81
21	Clay	5.474				5.474
22	Clayton	17.854	31.031	1.442		50.327
23	Clinton	8.405	6.836	0.249		15.49
24	Crawford	10.518	13.002			23.52
25	Dallas	9.415	24.086	3.462		36.963
26	Davis	9.522	10.56	5.278		25.36
27	Decatur	0.118	0.423	1.1		1.641
28	Delaware	16.445	4.149			20.594
29	Des Moines	26.415	17.156	24.375		67.946
30	Dickinson	6.924				6.924
31	Dubuque	19.959	19.236	10.015		49.21
32	Emmet	1.637				1.637
33	Fayette	3.55	4.121	0.852		8.523
34	Floyd	1.628				1.628
35	Franklin	2.946	5.208	0.019		8.173
36	Fremont	3.116		3.496		6.612
37	Greene	0.771	0.05			0.821
38	Grundy	2.448	2.679			5.127
39	Guthrie	1.143	3.027	3.231		7.401
40	Hamilton	3.356	2.859			6.215
41	Hancock	24.237	5.662	0.696		30.595
42	Hardin	5.206	6.738	1.672	0.149	13.765
43	Harrison	7.289	5.372	13.52		26.181
44	Henry	23.479	28.459	10.484		62.422
45	Howard	1.687	3.152			4.839
46	Humboldt	1.119				1.119
47	Ida	1.249	0.491			1.74
48	Iowa	4.471	10.88	8.23		23.581
49	Jackson	15.35	19.884	1.579		36.813
50	Jasper	25.015	33.499	5.687	6.67	70.871

CO	CName	Local	FM	FM-FAS	FM-FAS+	Total
51	Jefferson	8.819	12.605	0.969		22.393
52	Johnson	52.626	30.795	20.78		104.201
53	Jones	15.308	6.053			21.361
54	Keokuk	1.747	22.279	6.389		30.415
55	Kossuth	5.687		0.037		5.724
56	Lee	35.227	31.22	10.26		76.707
57	Linn	72.521	40.511	11.335	3.493	127.86
58	Louisa	9.553	16.524	0.164		26.241
59	Lucas	3.159	5.475	12.024		20.658
60	Lyon	4.779				4.779
61	Madison	12.059	12.616	19.434		44.109
62	Mahaska	12.985	12.986	7.019		32.99
63	Marion	23.398	40.678	7.457		71.533
64	Marshall	17.965	12.684			30.649
65	Mills	14.606	13.483	5.755		33.844
66	Mitchell	4.395	2.779			7.174
67	Monona	0.801	5.084			5.885
68	Monroe	6.509	4.191	1.809		12.509
69	Montgomery	2.373	2.368	1.66		6.401
70	Muscatine	18.148	0.379	0.472		18.999
71	O'Brien	2.822	1.393			4.215
72	Osceola	0.068				0.068
73	Page	0.954	6.041			6.995
74	Palo Alto	4.958	0.503			5.461
75	Plymouth	7.7	7.106	6.066		20.872
76	Pocahontas	1.106	0.342			1.448
77	Polk	1.342	0.497	2.612	3.798	8.249
78	Pottawattamie	34.684	28.768	18.431	0.435	82.318
79	Poweshiek	1.1	4.356	0.746		6.202
80	Ringgold	0.814	0.112	2.162		3.088
81	Sac	1.791	1.193			2.984
82	Scott	18.632	13.681			32.313
83	Shelby	10.421	24.347	10.402		45.17
84	Sioux	15.6	7.763			23.363
85	Story	19.52	7.615	0.895	0.547	28.577
86	Tama	11.257	10.768	2.212		24.237
87	Taylor	0.212				0.212
88	Union	4.17	0.801	3.325		8.296
89	Van Buren	2.46	13.382	1.796		17.638
90	Wapello	18.767	26.561	22.301	1.056	68.685
91	Warren	36.374	38.28	15.259		89.913
92	Washington	16.727	16.501	2.592		35.82
93	Wayne	0.068	6.639	1.056		7.763
94	Webster	5.959	2.535			8.494
95	Winnebago	4.102				4.102
96	Winneshiek	14.227	21.113	0.996		36.336
97	Woodbury	19.592	4.53	0.609		24.731
99	Wright	3.443	0.334			3.777

Table 13b : Road segments in the Upgrade Urgent category

CO	COname	RdID	S2Cratio	Route	Sys Class	SfcWidth	SgmtLen	AADT	Total Upgrade Cost	LOS00	LOSopt
4	Appanoose	C04-T069R18S25-RS05	5.30		Local	8.00	0.09	450	\$16,255.28	4	8
6	Benton	C06-T085R09S04-RS02	5.66		Local	22.00	0.70	480	\$131,163.28	4	8
6	Benton	C06-T085R09S24-RS07	5.78	E24	FM	22.00	0.40	490	\$146,768.23	4	8
6	Benton	C06-T086R09S33-RS02	5.66		Local	22.00	0.50	480	\$92,860.61	4	8
6	Benton	C06-T086R09S33-RS04	5.66		Local	22.00	0.50	480	\$92,860.61	4	8
8	Boone	C08-T084R26S25-RS03	17.02		Local	22.00	1.00	4110	\$865,755.43	4	12
10	Buchanan	C10-T088R09S08-RS12	8.57		Local	24.00	0.22	2420	\$132,234.69	5	11
10	Buchanan	C10-T088R09S09-RS05	5.32		Local	26.00	0.41	570	\$72,631.64	5	8
10	Buchanan	C10-T088R09S09-RS07	6.72		Local	20.00	0.13	570	\$24,476.34	4	8
10	Buchanan	C10-T090R09S16-RS03	5.78		Local	22.00	0.80	490	\$235,955.00	4	8
13	Calhoun	C13-T089R31S16-RS04	8.43		Local	24.00	0.50	2380	\$301,470.83	5	11
16	Cedar	C16-T079R03S13-RS14	9.38	X46	FM	24.00	0.15	2650	\$90,380.59	5	11
16	Cedar	C16-T080R03S14-RS03	5.66		FM	22.00	1.03	480	\$192,821.23	4	8
23	Clinton	C23-T083RE3S06-RS04	5.04		Local	24.00	1.07	540	\$189,373.71	5	8
24	Crawford	C24-T083R39S10-RS04	17.35		Local	20.00	0.02	4190	\$16,432.92	4	12
26	Davis	C26-T069R14S26-RS05	5.32		Local	26.00	0.47	570	\$83,614.96	5	8
28	Delaware	C28-T090R04S06-RS04	5.32		Local	24.00	0.16	570	\$28,698.35	5	8
29	Des Moines	C29-T069R02S18-RS03	5.66		Local	22.00	0.32	480	\$59,229.00	4	8
29	Des Moines	C29-T069R03S11-RS01	14.49		Local	22.00	0.50	3500	\$429,850.60	4	12
29	Des Moines	C29-T069R03S13-RS11	5.66		Local	22.00	0.32	480	\$59,229.00	4	8
29	Des Moines	C29-T070R03S28-RS03	7.30		Local	20.00	0.05	1690	\$30,813.65	4	11
31	Dubuque	C31-T089RE2S03-RS07	9.77		Local	24.00	0.03	2760	\$18,804.02	5	11
32	Emmet	C32-T098R33S18-RS01	5.54		Local	22.00	0.03	470	\$5,044.74	4	8
32	Emmet	C32-T098R33S18-RS03	5.54		Local	22.00	0.12	470	\$22,047.39	4	8
41	Hancock	C41-T094R24S05-RS03	5.07		Local	22.00	0.50	430	\$92,860.61	4	8
41	Hancock	C41-T095R24S28-RS02	5.07		Local	22.00	1.00	430	\$187,029.12	4	8
41	Hancock	C41-T096R25S28-RS04	5.70		Local	22.00	0.40	1320	\$245,276.69	4	11
41	Hancock	C41-T097R24S34-RS04	6.25		Local	20.00	0.50	530	\$92,860.61	4	8
41	Hancock	C41-T097R25S16-RS02	5.66		Local	22.00	0.25	480	\$46,523.73	4	8
41	Hancock	C41-T097R25S28-RS02	5.19		Local	22.00	1.00	440	\$187,029.12	4	8
41	Hancock	C41-T097R26S15-RS01	5.66		Local	22.00	0.15	480	\$27,839.50	4	8
42	Hardin	C42-T089R21S24-RS07	6.25		FM-FAS+	28.00	0.03	2510	\$18,279.59	6	11
44	Henry	C44-T070R05S03-RS03	5.07		Local	22.00	0.47	430	\$88,189.55	4	8
44	Henry	C44-T071R05S06-RS08	5.91	H38	FM-FAS	24.00	0.07	1800	\$41,247.52	5	11
44	Henry	C44-T071R05S26-RS08	5.00		FM	22.00	0.31	1240	\$191,660.93	4	11
44	Henry	C44-T071R06S05-RS07	6.72		Local	18.00	0.07	570	\$12,705.27	4	8
44	Henry	C44-T071R06S05-RS09	5.32		Local	24.00	0.39	570	\$69,442.93	5	8
44	Henry	C44-T071R06S06-RS07	6.72		Local	22.00	0.08	570	\$15,134.22	4	8
44	Henry	C44-T071R06S08-RS03	5.22		Local	24.00	0.10	560	\$17,537.88	5	8
44	Henry	C44-T071R06S08-RS05	5.22		Local	24.00	0.21	560	\$37,378.72	5	8
44	Henry	C44-T071R06S08-RS08	5.41		Local	26.00	0.51	580	\$90,346.67	5	8
44	Henry	C44-T071R07S24-RS13	5.30		Local	20.00	0.05	450	\$9,342.11	4	8
44	Henry	C44-T071R07S24-RS15	5.30		Local	20.00	0.10	450	\$18,497.39	4	8
49	Jackson	C49-T087RE4S24-RS05	5.30		FM	22.00	0.66	450	\$176,454.06	4	8

Table 13b – Upgrade urgent segments

CO	COName	Road Segment ID	S/C ratio	Route	Class	Width	Length	AADT	Upgrade costs	LOS00	LOSopt
50	Jasper	C50-T079R19S03-RS04	6.48		Local	20.00	0.44	550	\$82,397.44	4	8
50	Jasper	C50-T080R19S22-RS08	5.30		Local	22.00	0.14	450	\$26,718.45	4	8
50	Jasper	C50-T080R19S22-RS10	5.30		Local	22.00	0.14	450	\$26,718.45	4	8
50	Jasper	C50-T081R17S14-RS01	5.66		Local	22.00	1.01	480	\$189,271.22	4	8
50	Jasper	C50-T081R17S14-RS03	5.66		Local	22.00	0.02	480	\$3,550.00	4	8
52	Johnson	C52-T079R06S33-RS04	6.72		Local	18.00	0.55	570	\$102,202.72	4	8
52	Johnson	C52-T080R07S01-RS03	6.84		Local	22.00	0.06	580	\$11,584.22	4	8
52	Johnson	C52-T080R07S10-RS03	6.84		Local	22.00	0.19	580	\$36,060.56	4	8
52	Johnson	C52-T080R07S11-RS01	6.84		Local	22.00	0.10	580	\$18,684.23	4	8
52	Johnson	C52-T080R07S11-RS03	6.84		Local	22.00	0.40	580	\$74,736.91	4	8
52	Johnson	C52-T080R07S11-RS05	6.84		Local	22.00	0.50	580	\$93,421.14	4	8
52	Johnson	C52-T080R07S12-RS01	6.84		Local	22.00	0.41	580	\$76,605.33	4	8
52	Johnson	C52-T080R07S24-RS07	5.87		Local	22.00	0.03	1360	\$19,104.47	4	11
52	Johnson	C52-T080R07S36-RS04	5.25		Local	22.00	0.14	1600	\$191,846.11	5	11
57	Linn	C57-T083R08S01-RS32	5.25		FM-FAS	22.00	0.20	1300	\$122,638.35	4	11
57	Linn	C57-T083R08S01-RS37	5.89		Local	22.00	0.10	500	\$18,497.39	4	8
57	Linn	C57-T083R08S11-RS04	5.89		Local	22.00	0.27	500	\$49,886.89	4	8
57	Linn	C57-T083R08S12-RS03	5.89		Local	22.00	0.50	500	\$92,860.61	4	8
57	Linn	C57-T083R08S15-RS11	5.19	E44	FM-FAS	22.00	0.50	440	\$92,860.61	4	8
57	Linn	C57-T083R08S15-RS13	5.19	E44	FM-FAS	22.00	0.23	440	\$42,973.72	4	8
57	Linn	C57-T083R08S22-RS03	5.42		Local	22.00	0.51	460	\$95,289.56	4	8
57	Linn	C57-T084R06S32-RS03	5.41		FM-FAS+	24.00	0.55	580	\$96,901.23	5	8
57	Linn	C57-T084R06S33-RS01	5.41		FM-FAS+	24.00	0.27	580	\$47,653.44	5	8
57	Linn	C57-T084R06S33-RS03	5.41		FM-FAS+	24.00	0.05	580	\$9,566.12	5	8
57	Linn	C57-T085R07S27-RS09	5.13		Local	26.00	0.50	250	\$103,019.56	3	8
57	Linn	C57-T086R07S04-RS01	6.36	W45	FM-FAS	22.00	0.06	540	\$11,584.22	4	8
58	Louisa	C58-T074R02S07-RS08	6.25		Local	22.00	0.05	530	\$9,342.11	4	8
61	Madison	C61-T074R26S35-RS03	5.32		FM-FAS	24.00	0.60	570	\$172,896.65	5	8
61	Madison	C61-T074R26S36-RS03	5.32		FM-FAS	24.00	0.50	570	\$158,483.72	5	8
61	Madison	C61-T074R26S36-RS05	5.32		FM-FAS	24.00	0.25	570	\$44,110.43	5	8
61	Madison	C61-T075R28S01-RS04	7.65	P69	FM	24.00	0.23	2160	\$139,513.67	5	11
62	Mahaska	C62-T076R14S08-RS09	42.95		Local	22.00	0.51	360	\$118,309.88	1	8
63	Marion	C63-T075R18S07-RS03	6.01		FM	22.00	0.35	510	\$66,142.17	4	8
63	Marion	C63-T075R18S08-RS01	6.01		FM	22.00	1.01	510	\$189,271.22	4	8
63	Marion	C63-T075R18S16-RS06	5.30		Local	22.00	0.40	450	\$74,363.23	4	8
63	Marion	C63-T075R18S21-RS04	5.30		Local	22.00	0.65	450	\$179,360.51	4	8
63	Marion	C63-T075R19S09-RS07	7.60		Local	22.00	0.03	1760	\$19,104.47	4	11
63	Marion	C63-T076R18S12-RS06	5.88	G39	Local	28.00	0.20	2360	\$117,343.17	6	11
63	Marion	C63-T076R18S13-RS02	5.88	G39	Local	28.00	0.15	2360	\$87,859.96	6	11
65	Mills	C65-T073R43S06-RS04	5.78		Local	22.00	0.79	490	\$147,418.56	4	8
65	Mills	C65-T073R43S20-RS07	5.66	H16	FM	22.00	0.71	480	\$132,471.17	4	8
65	Mills	C65-T073R43S28-RS03	5.66	H16	FM	22.00	0.12	480	\$22,047.39	4	8
65	Mills	C65-T073R43S29-RS03	5.66	H16	FM	22.00	0.26	480	\$48,765.83	4	8
70	Muscatine	C70-T076R02S30-RS04	7.14		Local	26.00	0.52	330	\$108,201.63	3	8
70	Muscatine	C70-T077RE1S12-RS12	5.32		Local	24.00	0.98	570	\$173,961.63	5	8
70	Muscatine	C70-T078R02S30-RS03	9.45		Local	28.00	0.24	130	\$54,747.31	1	8
70	Muscatine	C70-T078R04S14-RS08	5.32		Local	24.00	0.30	570	\$53,145.10	5	8

Table 13b : Upgrade Urgent segments

CO	COName	Road Segment ID	S/C ratio	Route	Class	Width	Length	AADT	Upgrade costs	LOS00	LOSopt
78	Pottawattamie	C78-T075R44S11-RS12	5.19		Local	20.00	0.60	440	\$112,665.89	4	8
78	Pottawattamie	C78-T075R44S12-RS04	5.19		Local	22.00	0.65	440	\$122,008.01	4	8
78	Pottawattamie	C78-T075R44S13-RS04	5.19		Local	22.00	0.40	440	\$74,363.23	4	8
78	Pottawattamie	C78-T076R44S34-RS06	5.19	L19	FM-FAS	22.00	0.26	440	\$48,765.83	4	8
78	Pottawattamie	C78-T077R44S03-RS07	7.21	G14	Local	20.00	0.19	1670	\$118,940.71	4	11
83	Shelby	C83-T079R38S08-RS05	12.90		FM	28.00	0.49	570	\$101,154.02	3	8
83	Shelby	C83-T079R38S19-RS04	11.31		Local	24.00	0.24	500	\$50,162.44	3	8
83	Shelby	C83-T079R38S19-RS06	11.31		Local	24.00	0.45	500	\$92,655.42	3	8
83	Shelby	C83-T079R38S30-RS06	7.36		Local	24.00	0.46	340	\$95,350.10	3	8
84	Sioux	C84-T095R45S17-RS01	5.19		Local	26.00	0.56	1580	\$358,218.87	5	11
85	Story	C85-T083R23S18-RS12	5.01		Local	14.00	0.20	150	\$44,564.98	2	8
85	Story	C85-T083R24S07-RS02	7.08		Local	28.00	0.50	3650	\$416,625.96	6	12
87	Taylor	C87-T069R32S01-RS08	6.01		Local	20.00	0.08	100	\$18,790.39	1	8
89	Van Buren	C89-T068R09S01-RS05	6.25		FM-FAS	16.00	0.06	530	\$11,584.22	4	8
89	Van Buren	C89-T068R09S01-RS12	6.25		FM-FAS	22.00	0.03	530	\$5,792.11	4	8
89	Van Buren	C89-T070R11S35-RS03	6.48	J23	FM	22.00	0.09	550	\$16,255.28	4	8
90	Wapello	C90-T071R12S26-RS05	6.49	V47	Local	26.00	0.24	300	\$50,162.44	3	8
90	Wapello	C90-T072R13S29-RS04	5.07		Local	22.00	0.20	430	\$37,181.61	4	8
90	Wapello	C90-T072R14S23-RS06	5.68		Local	24.00	0.05	1730	\$30,329.06	5	11
91	Warren	C91-T074R25S31-RS01	5.89		FM-FAS	22.00	0.18	500	\$33,631.61	4	8
94	Webster	C94-T088R27S02-RS02	9.90		Local	26.00	0.35	3280	\$297,609.11	5	12
97	Woodbury	C97-T088R47S32-RS07	5.54		FM-FAS	22.00	0.50	470	\$92,860.61	4	8

	FINAL REPORT	SUPPLEMENTAL BOOKLET
	<p>Total Cost of Transportation analysis of road and highway issues</p> <p>Phase II A restudy of Iowa county roads using FY2002 data</p>	<p>CONTAINS DATA AND RESULTS TABLES REFERRED TO IN THE TEXT OF THE MAIN REPORT.</p>
	<p>September 2003</p> <p>Submitted to:</p> <p>Highway Division of the Iowa Department of Transportation and Iowa Highway Research Board</p> <p>Project No. TR-477</p>	<p>TABLE 13 C</p>
	<p>Stephen W. De Vries, P.E. Iowa County Engineers Association Service Bureau 501 SW 7th, Suite Q Des Moines, Iowa 50309</p>	

Table 13c : Printout of road segments that warrant Upgrade

1 Adair

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C01-T075R32S13-RS05		Local	22.0	0.423	220	\$79,034	4	8	2.3222
C01-T076R32S33-RS02		Local	26.0	1.001	430	\$177,327	5	8	4.0102
Totals					1.424	\$256,362			

2 Adams

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C02-T071R34S07-RS30		FM	22.0	0.112	200	\$20,926	4	8	2.1111
C02-T072R33S23-RS12		Local	12.0	0.112	210	\$20,926	4	8	2.2167
Totals					0.224	\$41,853			

3 Allamakee

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C03-T097R05S25-RS27		Local	20.0	0.261	420	\$48,766	4	8	4.9500
C03-T097R05S35-RS05		Local	20.0	0.348	420	\$65,021	4	8	4.9500
C03-T100R06S31-RS02		Local	22.0	0.143	60	\$33,173	1	8	3.2191
C03-T097R05S25-RS04		Local	20.0	0.099	420	\$18,497	4	8	4.9502
C03-T100R05S35-RS06	X6A	FM-FAS	22.0	0.410	250	\$76,605	4	8	2.6389
C03-T100R04S32-RS06		Local	14.0	0.317	35	\$39,910	1	5	2.8360
C03-T100R04S11-RS03		Local	20.0	0.497	200	\$92,861	4	8	2.1111
C03-T097R05S25-RS25		Local	20.0	0.479	420	\$89,497	4	8	4.9501
C03-T099R05S03-RS05	X20	FM-FAS	26.0	0.348	280	\$61,648	5	8	2.4998
C03-T100R04S12-RS03		Local	20.0	0.249	200	\$46,524	4	8	2.1111
C03-T100R05S20-RS14		Local	12.0	0.087	60	\$20,182	1	8	3.2183
C03-T098R02S32-RS04		Local	16.0	0.578	40	\$92,326	1	6	2.8262
C03-T098R05S19-RS05		Local	20.0	0.031	210	\$5,792	4	8	2.2165
C03-T100R05S34-RS10	X6A	FM-FAS	22.0	0.392	250	\$73,242	4	8	2.6389
C03-T099R05S02-RS03	X20	FM-FAS	26.0	0.491	280	\$86,981	5	8	2.4998
C03-T099R05S02-RS04	X6A	FM-FAS	26.0	0.280	250	\$49,602	5	8	2.0652
C03-T099R06S06-RS11	A26	FM-FAS	22.0	0.522	230	\$97,532	4	8	2.4278
C03-T099R05S03-RS07	X20	FM-FAS	26.0	0.267	280	\$47,299	5	8	2.4998
C03-T100R05S34-RS12	X6A	FM-FAS	22.0	0.050	250	\$201,492	4	8	2.6386
C03-T099R05S10-RS04	X20	FM-FAS	24.0	0.653	280	\$115,679	5	8	2.4998
Totals					6.502	\$1,362,631			

4 Appanoose

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C04-T070R17S01-RS07		FM	20.0	0.299	200	\$55,866	4	8	2.1111
C04-T070R17S02-RS03		FM	20.0	1.212	200	\$226,453	4	8	2.1111
C04-T068R17S18-RS01	J45	FM-FAS	22.0	0.149	190	\$27,839	4	8	2.0055
C04-T070R17S03-RS03		FM	20.0	0.789	200	\$147,419	4	8	2.1111
C04-T070R19S04-RS06		Local	8.0	0.249	160	\$51,613	3	8	3.0428
C04-T070R17S01-RS03		FM	20.0	0.491	200	\$115,140	4	8	2.1111
C04-T070R16S06-RS04		FM	22.0	1.001	200	\$187,029	4	8	2.1111
C04-T069R18S24-RS05		Local	22.0	0.149	200	\$27,839	4	8	2.1111
C04-T069R18S23-RS06	T24	FM	26.0	0.249	410	\$44,110	5	8	3.8237
C04-T069R19S01-RS06		FM	22.0	0.522	410	\$97,532	4	8	4.8322
C04-T070R17S01-RS05		FM	20.0	0.398	200	\$74,363	4	8	2.1111
C04-T068R17S18-RS03	J45	FM-FAS	22.0	0.889	190	\$166,103	4	8	2.0055
C04-T069R18S14-RS02	T24	FM	26.0	0.988	510	\$220,925	5	8	4.7563
C04-T069R18S23-RS02	T24	FM	26.0	0.497	510	\$88,044	5	8	4.7563
C04-T069R18S23-RS04	T24	FM	26.0	0.249	420	\$44,110	5	8	3.9170
C04-T068R18S02-RS03		FM-FAS	28.0	0.234	470	\$37,495	6	8	3.2107
C04-T069R17S19-RS01		Local	22.0	0.522	200	\$97,532	4	8	2.1111
C04-T069R18S26-RS02	T24	FM	26.0	1.013	410	\$227,408	5	8	3.8237
C04-T070R18S06-RS02		Local	22.0	0.460	340	\$125,247	4	8	3.8410
C04-T070R19S04-RS04		Local	10.0	0.249	160	\$51,613	3	8	3.0428
Totals					10.609	\$2,113,681			

5 Audubon

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C05-T079R35S04-RS01		Local	22.0	0.143	40	\$22,842	1	6	2.8264
C05-T080R35S21-RS18		Local	20.0	0.062	420	\$11,584	4	8	4.9503
C05-T078R34S06-RS09		Local	24.0	0.037	490	\$6,555	5	8	4.5695
C05-T079R35S05-RS03		Local	22.0	0.497	40	\$79,388	1	6	2.8261
Totals					0.739	\$120,368			

6 Benton

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C06-T085R09S20-RS05		Local	22.0	0.820	260	\$153,211	4	8	2.7444
C06-T086R09S26-RS03		Local	24.0	0.050	520	\$8,858	5	8	4.8495
C06-T085R09S24-RS04	E24	FM	22.0	0.118	300	\$22,047	4	8	3.3892
C06-T085R10S28-RS08		Local	22.0	0.303	320	\$56,613	4	8	3.6151
C06-T085R10S08-RS06		Local	22.0	0.951	240	\$177,687	4	8	2.5333
C06-T084R09S01-RS04		Local	24.0	0.690	360	\$122,234	5	8	3.2140
C06-T082R12S20-RS07		Local	20.0	0.180	220	\$33,632	4	8	2.3222
C06-T082R12S20-RS03		Local	20.0	0.193	220	\$36,061	4	8	2.3222
C06-T085R09S25-RS04	E24	FM	22.0	1.001	300	\$265,284	4	8	3.3891
C06-T084R09S13-RS05		Local	24.0	1.243	250	\$220,198	5	8	2.0652
C06-T085R10S28-RS04		Local	22.0	0.071	320	\$13,266	4	8	3.6152
C06-T085R10S31-RS03		Local	24.0	0.168	160	\$34,824	3	8	3.0427
C06-T082R12S20-RS01		Local	20.0	0.087	220	\$16,255	4	8	2.3222
C06-T085R09S30-RS03		Local	22.0	0.261	260	\$48,766	4	8	2.7445
C06-T085R10S07-RS03		Local	22.0	0.298	240	\$55,679	4	8	2.5334
C06-T085R10S06-RS08		Local	22.0	0.131	240	\$24,476	4	8	2.5334
C06-T086R10S36-RS04		Local	26.0	0.851	280	\$150,755	5	8	2.4998
C06-T082R12S20-RS05		Local	20.0	0.050	220	\$9,342	4	8	2.3222
C06-T083R09S35-RS02		Local	20.0	0.031	230	\$5,792	4	8	2.4274
C06-T085R09S21-RS04		Local	22.0	0.379	260	\$70,813	4	8	2.7444
C06-T084R09S01-RS06		Local	24.0	0.298	360	\$52,791	5	8	3.2140
C06-T085R09S20-RS03		Local	22.0	0.491	260	\$91,740	4	8	2.7444
C06-T082R09S02-RS02		Local	22.0	1.019	210	\$190,392	4	8	2.2167
C06-T084R09S12-RS04		Local	24.0	1.063	360	\$188,311	5	8	3.2140
C06-T085R09S24-RS05	E24	FM	22.0	0.280	220	\$52,316	4	8	2.3222
C06-T082R09S28-RS03		Local	26.0	0.771	360	\$136,583	5	8	3.2140
C06-T085R09S20-RS04		Local	22.0	0.099	260	\$18,497	4	8	2.7444
C06-T084R09S14-RS03		Local	22.0	0.249	300	\$46,524	4	8	3.3892
C06-T085R09S16-RS03		Local	22.0	0.373	260	\$69,692	4	8	2.7445
C06-T085R09S17-RS06		Local	22.0	0.081	260	\$15,134	4	8	2.7445
C06-T085R10S17-RS06		Local	22.0	0.261	240	\$48,766	4	8	2.5334
C06-T084R09S13-RS01		Local	22.0	0.230	300	\$42,974	4	8	3.3892
C06-T085R10S28-RS06		Local	22.0	0.216	320	\$40,358	4	8	3.6151
Totals					13.307	\$2,519,869			

7 Black Hawk

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C07-T090R14S33-RS18	T75	FM-FAS	22.0	0.950	1930	\$545,091	7	11	2.2968
C07-T088R14S22-RS01	D25	FM-FAS	26.0	0.249	250	\$44,110	5	8	2.0652
C07-T088R13S21-RS02		Local	22.0	0.988	210	\$184,600	4	8	2.2167
C07-T088R14S14-RS03		FM-FAS	24.0	0.249	380	\$44,110	5	8	3.3926

Table 13c : Printout of road segments that warrant Upgrade

RdID	Route	SysClass	Width	Length	AAADT	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C07-T090R14S04-RS05		Local	20.0	0.101	260	\$18,871	4	8	2.7445
C07-T090R14S33-RS14		Local	24.0	0.214	400	\$37,910	5	8	3.7304
C07-T090R14S33-RS16		Local	24.0	0.158	400	\$27,990	5	8	3.7304
C07-T087R14S21-RS12	D46	FM	22.0	0.067	190	\$12,518	4	8	2.0054
C07-T089R13S07-RS06		Local	22.0	0.180	400	\$33,632	4	8	4.7144
C07-T087R12S03-RS03		Local	20.0	0.112	210	\$20,926	4	8	2.2167
C07-T089R12S27-RS03		Local	20.0	0.261	260	\$48,766	4	8	2.7445
C07-T089R12S34-RS01		Local	22.0	1.013	240	\$256,771	4	8	2.5333
C07-T087R12S03-RS01		Local	20.0	0.218	210	\$40,732	4	8	2.2167
C07-T089R12S33-RS03		Local	22.0	0.497	200	\$92,861	4	8	2.1111
C07-T088R13S21-RS01		Local	26.0	0.479	250	\$84,855	5	8	2.0652
C07-T090R14S04-RS07		Local	20.0	0.143	260	\$98,441	4	8	2.7445
C07-T088R14S14-RS01		FM-FAS	24.0	0.752	380	\$133,217	5	8	3.3926
C07-T087R12S04-RS03		Local	20.0	0.261	210	\$173,866	4	8	2.2167
C07-T090R11S02-RS02	V56	FM	24.0	0.311	330	\$55,094	5	8	2.9462
C07-T088R14S06-RS04	T69	FM	26.0	0.379	350	\$67,140	5	8	3.1247
C07-T088R12S17-RS08		Local	22.0	0.249	200	\$46,524	4	8	2.1111
C07-T089R12S22-RS03		Local	24.0	0.497	300	\$88,044	5	8	2.6784
C07-T087R12S03-RS05		Local	20.0	0.168	210	\$115,765	4	8	2.2166
C07-T088R14S28-RS03		Local	24.0	0.292	320	\$51,728	5	8	2.8569
C07-T089R12S23-RS01		Local	24.0	0.249	300	\$44,110	5	8	2.6784
C07-T090R14S04-RS03		Local	22.0	0.162	260	\$30,268	4	8	2.7445
C07-T088R12S17-RS07		Local	18.0	0.721	25	\$90,774	1	5	2.0255
Totals				9.920		\$2,488,714			

8 Boone

RdID	Route	SysClass	Width	Length	AAADT	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C08-T082R26S36-RS04		Local	22.0	0.249	240	\$46,524	4	8	2.5333
C08-T083R25S02-RS02		Local	20.0	0.590	330	\$110,237	4	8	3.7281
C08-T083R26S34-RS07		Local	24.0	0.062	410	\$10,983	5	8	3.8236
C08-T083R26S34-RS06		Local	30.0	0.970	410	\$155,426	6	8	2.8008
Totals				1.871		\$323,170			

9 Bremer

RdID	Route	SysClass	Width	Length	AAADT	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C09-T091R13S22-RS09		Local	24.0	0.031	250	\$5,492	5	8	2.0654
C09-T091R13S29-RS02	V19	FM	30.0	1.001	310	\$160,394	6	8	2.0242
C09-T091R14S07-RS08		Local	22.0	0.062	200	\$11,584	4	8	2.1111
C09-T092R14S14-RS05		Local	22.0	0.068	810	\$41,907	4	11	3.0331
C09-T091R14S14-RS03		Local	24.0	0.497	300	\$88,044	5	8	2.6784
C09-T092R14S15-RS04		Local	22.0	0.497	210	\$92,861	4	8	2.2167
C09-T091R14S33-RS05		Local	22.0	0.578	260	\$107,995	4	8	2.7444
C09-T091R14S34-RS05		Local	20.0	0.261	260	\$48,766	4	8	2.7445
C09-T093R14S20-RS03		Local	20.0	0.081	30	\$10,198	1	5	2.4308
C09-T091R11S34-RS05	V56	FM	26.0	0.497	330	\$88,044	5	8	2.9462
C09-T091R14S22-RS01		Local	28.0	0.677	310	\$108,478	6	8	2.0242
C09-T091R11S35-RS02	V56	FM	26.0	1.001	330	\$177,327	5	8	2.9462
C09-T091R13S21-RS05		Local	24.0	0.081	250	\$14,349	5	8	2.0651
C09-T091R14S09-RS03		FM-FAS+	20.0	0.118	3990	\$97,043	7	12	3.8184
C09-T091R13S32-RS02	V19	FM	30.0	0.522	310	\$83,642	6	8	2.0242
C09-T091R13S28-RS01		Local	22.0	0.957	250	\$178,808	4	8	2.6389
C09-T091R14S14-RS05		Local	24.0	0.261	300	\$46,236	5	8	2.6784
C09-T091R12S11-RS03		Local	24.0	0.112	260	\$19,841	5	8	2.1479
C09-T091R12S14-RS01		Local	24.0	0.379	260	\$67,140	5	8	2.1478
C09-T091R13S17-RS03		Local	22.0	0.491	220	\$91,740	4	8	2.3222
C09-T091R13S18-RS03		Local	22.0	0.808	220	\$173,469	4	8	2.3222
Totals				8.980		\$1,713,355			

10 Buchanan

RdID	Route	SysClass	Width	Length	AAADT	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C10-T089R10S09-RS06		Local	20.0	0.261	150	\$54,101	3	8	2.8526
C10-T087R10S22-RS04	V71	FM-FAS	34.0	0.336	550	\$53,838	6	8	3.7572
C10-T090R07S23-RS03		Local	22.0	0.242	360	\$100,528	4	8	4.0670
C10-T088R09S09-RS04		Local	28.0	0.099	360	\$40,283	6	8	2.3507
C10-T088R09S09-RS03		FM-FAS+	22.0	0.050	200	\$9,342	4	8	2.1111
C10-T090R07S24-RS01		Local	22.0	1.001	360	\$244,329	4	8	4.0670
C10-T090R08S05-RS01		Local	28.0	0.242	420	\$91,164	6	8	2.8692
C10-T090R09S09-RS11	C57	FM	30.0	0.326	350	\$52,236	6	8	2.2853
C10-T090R08S05-RS03		Local	24.0	0.037	420	\$6,555	5	8	3.9169
C10-T090R09S09-RS13	C57	FM	30.0	0.187	310	\$29,964	6	8	2.0242
C10-T089R10S32-RS05		FM	26.0	0.472	350	\$83,615	5	8	3.1248
C10-T088R09S09-RS01		FM-FAS+	22.0	0.249	200	\$46,524	4	8	2.1111
C10-T089R10S32-RS01		FM	26.0	0.180	500	\$31,887	5	8	4.6630
C10-T088R08S33-RS05		FM	26.0	0.249	250	\$44,110	5	8	2.0652
C10-T088R08S19-RS03		Local	22.0	0.050	980	\$30,814	4	11	3.9545
C10-T089R10S32-RS03		FM	26.0	0.317	350	\$56,157	5	8	3.1248
C10-T088R08S34-RS03		FM	26.0	0.249	250	\$44,110	5	8	2.0652
Totals				4.547		\$1,019,557			

11 Buena Vista

RdID	Route	SysClass	Width	Length	AAADT	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C11-T092R35S14-RS12		FM	26.0	0.230	490	\$40,745	5	8	4.5698
C11-T091R37S33-RS02		Local	24.0	0.640	280	\$113,376	5	8	2.4998
C11-T092R35S14-RS14		FM	26.0	0.522	490	\$92,472	5	8	4.5698
C11-T091R37S33-RS04		Local	24.0	0.068	280	\$12,046	5	8	2.4999
Totals				1.460		\$258,639			

12 Butler

RdID	Route	SysClass	Width	Length	AAADT	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C12-T090R15S05-RS05	C55	FM-FAS	34.0	0.062	390	\$9,934	6	8	2.5466
C12-T090R16S29-RS06		Local	30.0	0.752	390	\$120,495	6	8	2.5466
Totals				0.814		\$130,430			

13 Calhoun

RdID	Route	SysClass	Width	Length	AAADT	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C13-T089R32S32-RS07		Local	20.0	0.019	300	\$3,550	4	8	3.3883
C13-T086R34S22-RS08		Local	26.0	0.323	289	\$57,220	5	8	2.5802
C13-T089R33S22-RS04		Local	22.0	0.951	400	\$191,862	4	8	4.7144
Totals				1.293		\$252,632			

14 Carroll

RdID	Route	SysClass	Width	Length	AAADT	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C14-T082R33S33-RS05		Local	24.0	0.118	250	\$20,904	5	8	2.0653
C14-T084R35S11-RS04		Local	22.0	0.012	210	\$2,242	4	8	2.2171
Totals				0.130		\$23,146			

16 Cedar

RdID	Route	SysClass	Width	Length	AAADT	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C16-T080R04S24-RS01	F36	FM-FAS	26.0	0.099	300	\$17,538	5	8	2.6785
C16-T082R04S19-RS03		Local	22.0	0.261	250	\$48,766	4	8	2.6389
C16-T081R03S25-RS08		Local	22.0	0.497	200	\$92,861	4	8	2.1111

Table 13c : Printout of road segments that warrant Upgrade

C29-T070R02S06-RS06	X60	FM-FAS	22.0	0.901	270	\$168,345	4	8	3.0503
C29-T069R03S33-RS06		FM-FAS	22.0	0.771	340	\$144,055	4	8	3.8410
C29-T070R03S19-RS03		FM	22.0	0.342	210	\$63,900	4	8	2.2166
C29-T072R02S19-RS03		Local	26.0	0.479	280	\$84,855	5	8	2.4998
C29-T070R04S06-RS02	X30	FM-FAS	22.0	0.497	240	\$92,861	4	8	2.5333
C29-T070R04S23-RS01		Local	20.0	1.013	200	\$189,271	4	8	2.1111
C29-T070R03S30-RS04		FM	22.0	0.342	210	\$63,900	4	8	2.2166
C29-T069R04S24-RS03		FM-FAS	22.0	0.099	230	\$18,497	4	8	2.4278
C29-T069R03S33-RS05		FM-FAS	22.0	0.037	280	\$6,913	4	8	3.1629
C29-T070R03S29-RS03		Local	20.0	0.392	300	\$73,242	4	8	3.3892
C29-T069R04S03-RS02		FM-FAS	22.0	0.441	190	\$82,397	4	8	2.0055
C29-T069R04S04-RS03		FM-FAS	22.0	0.249	190	\$46,524	4	8	2.0055
C29-T069R03S33-RS03		FM-FAS	22.0	0.317	200	\$59,229	4	8	2.1111
C29-T071R02S31-RS07	X60	FM-FAS	24.0	0.242	270	\$42,870	5	8	2.4105
C29-T070R02S18-RS04	X60	FM-FAS	26.0	0.510	300	\$90,347	5	8	2.6784
C29-T069R03S11-RS06		Local	26.0	0.392	320	\$69,443	5	8	2.8569
C29-T070R04S19-RS01		FM-FAS	30.0	1.032	470	\$165,361	6	8	3.2107
C29-T069R02S17-RS07		FM-FAS	18.0	0.168	200	\$31,390	4	8	2.1111
C29-T070R03S09-RS05		FM	24.0	0.292	260	\$51,728	5	8	2.1478
C29-T069R03S14-RS05		Local	26.0	0.019	320	\$3,366	5	8	2.8567
C29-T070R02S20-RS04		Local	20.0	0.491	200	\$91,740	4	8	2.1111
C29-T069R04S04-RS04		FM-FAS	22.0	0.559	190	\$104,445	4	8	2.0056
C29-T070R03S10-RS06		Local	20.0	0.547	220	\$102,203	4	8	2.3222
C29-T069R04S10-RS02		FM-FAS	22.0	0.758	190	\$141,626	4	8	2.0055
C29-T070R03S20-RS04		FM	22.0	0.106	210	\$19,805	4	8	2.2167
C29-T069R04S09-RS07		FM-FAS	22.0	0.398	190	\$74,363	4	8	2.0055
C29-T070R03S20-RS06		FM	22.0	0.137	210	\$25,597	4	8	2.2167
C29-T069R02S30-RS03		Local	22.0	0.995	390	\$185,908	4	8	4.4059
C29-T070R04S06-RS04	X30	FM-FAS	22.0	0.497	200	\$92,861	4	8	2.1111
C29-T069R03S12-RS03		Local	22.0	0.321	240	\$59,976	4	8	2.5334
C29-T070R03S11-RS07		Local	22.0	0.199	300	\$37,182	4	8	3.3891
C29-T069R03S14-RS04		Local	26.0	0.503	320	\$89,107	5	8	2.8569
C29-T070R02S29-RS03		Local	20.0	0.165	200	\$30,829	4	8	2.1111
C29-T069R03S11-RS04		Local	26.0	0.640	320	\$113,376	5	8	2.8569
C29-T069R03S32-RS03		FM-FAS	22.0	0.447	200	\$83,518	4	8	2.1111
C29-T070R04S11-RS03		Local	26.0	0.510	270	\$90,347	5	8	2.4105
C29-T070R03S15-RS02		FM	22.0	0.249	310	\$46,524	4	8	3.5021
C29-T070R04S22-RS05		Local	20.0	0.292	200	\$54,558	4	8	2.1111
C29-T070R03S11-RS05		Local	20.0	0.124	220	\$23,168	4	8	2.3222
C29-T070R02S17-RS03		FM	22.0	0.199	350	\$37,182	4	8	3.9540
C29-T070R03S09-RS03		FM	22.0	0.267	260	\$49,887	4	8	2.7444
C29-T070R04S20-RS01		FM-FAS	30.0	0.211	470	\$33,809	6	8	3.2107
C29-T070R04S33-RS04		FM-FAS	24.0	1.013	320	\$179,453	5	8	2.8569
C29-T071R02S19-RS01	X60	FM-FAS	22.0	0.497	200	\$92,861	4	8	2.1111
C29-T071R03S24-RS01		FM-FAS	22.0	1.013	210	\$189,271	4	8	2.2167
C29-T069R02S16-RS03		Local	18.0	0.211	200	\$39,424	4	8	2.1111
C29-T071R04S31-RS08	X30	FM-FAS	22.0	0.396	240	\$73,990	4	8	2.5334
C29-T070R03S10-RS04		FM	22.0	0.062	310	\$11,584	4	8	3.5020
C29-T069R04S23-RS06		FM-FAS	22.0	0.211	200	\$39,424	4	8	2.1111
C29-T069R03S11-RS09		Local	22.0	0.572	240	\$106,874	4	8	2.5333
C29-T070R02S20-RS06		Local	20.0	0.379	200	\$70,813	4	8	2.1111
C29-T069R03S29-RS05		FM-FAS	22.0	0.329	200	\$75,331	4	8	2.1111
C29-T070R04S24-RS03		Local	22.0	0.143	200	\$26,718	4	8	2.1111
C29-T070R02S06-RS03	X60	FM-FAS	26.0	0.342	270	\$60,585	5	8	2.4105
C29-T070R02S19-RS16		Local	20.0	0.249	200	\$46,524	4	8	2.1111
C29-T070R02S07-RS04	X60	FM-FAS	22.0	1.032	270	\$192,821	4	8	3.0503
C29-T070R03S09-RS07		FM	22.0	0.932	310	\$174,137	4	8	3.5021
C29-T070R03S25-RS20		Local	18.0	0.118	280	\$22,047	4	8	3.1633
C29-T070R03S11-RS03		Local	20.0	0.491	220	\$91,740	4	8	2.3222
C29-T069R03S14-RS07		Local	26.0	0.491	320	\$86,981	5	8	2.8569
Totals				34.157		\$6,447,009			

30 Dickinson

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C30-T098R37S02-RS01		Local	26.0	0.510	250	\$90,347	5	8	2.0652
C30-T099R36S08-RS07		Local	22.0	0.242	4660	\$347,057	7	14	2.8296
C30-T099R36S08-RS04		Local	24.0	0.249	4660	\$357,096	7	14	2.8296
C30-T100R36S14-RS04		Local	24.0	0.280	350	\$124,430	5	8	3.1248
C30-T099R37S35-RS04		Local	26.0	0.118	250	\$20,904	5	8	2.0653
Totals				1.399		\$939,834			

31 Dubuque

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C31-T089R02S30-RS08		Local	24.0	0.086	290	\$15,235	5	8	2.5891
C31-T088R02S13-RS03		FM	24.0	0.497	250	\$88,044	5	8	2.0652
C31-T089RE2S18-RS04		FM-FAS	24.0	0.671	2030	\$432,256	7	11	2.6008
C31-T088R02S14-RS03		FM	24.0	1.429	250	\$253,148	5	8	2.0652
C31-T089RE2S07-RS12		FM-FAS	24.0	0.062	2030	\$35,574	7	11	2.6008
C31-T089RE1S29-RS07		Local	12.0	0.242	60	\$56,139	1	8	3.2189
C31-T090RE2S28-RS03		Local	20.0	0.500	40	\$79,867	1	6	2.8262
C31-T089RE2S17-RS04		FM-FAS	24.0	0.129	2030	\$74,018	7	11	2.6008
C31-T089R01S33-RS03		Local	22.0	1.243	40	\$198,549	1	6	2.8262
C31-T089RE2S03-RS05		FM-FAS	24.0	0.180	2760	\$143,411	7	11	3.5360
C31-T088RE2S09-RS06		FM	22.0	0.497	200	\$141,881	4	8	2.1111
C31-T088RE2S16-RS02		FM	22.0	0.511	200	\$95,476	4	8	2.1111
C31-T089RE2S30-RS02		Local	24.0	0.497	1940	\$285,169	7	11	2.3087
C31-T088R02S19-RS03		FM	22.0	0.727	190	\$135,834	4	8	2.0055
C31-T089R02S19-RS04		Local	24.0	1.001	290	\$309,950	5	8	2.5891
C31-T089R01S32-RS07		Local	22.0	0.099	40	\$15,814	1	6	2.8254
C31-T089RE1S28-RS05		Local	12.0	0.653	60	\$151,483	1	8	3.2189
C31-T089R02S30-RS06		Local	24.0	0.442	290	\$78,300	5	8	2.5891
Totals				9.466		\$2,590,149			

32 Emmet

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C32-T099R34S10-RS01		Local	24.0	0.510	250	\$90,347	5	8	2.0652
Totals				0.510		\$90,347			

33 Fayette

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C33-T091R09S22-RS04		FM-FAS	24.0	0.373	290	\$66,077	5	8	2.5891
C33-T094R08S08-RS03		FM	24.0	0.951	250	\$168,470	5	8	2.0652
C33-T091R09S34-RS08		Local	22.0	0.479	320	\$89,497	4	8	3.6151
C33-T095R10S12-RS02		FM	24.0	0.050	420	\$8,858	5	8	3.9169
C33-T091R09S27-RS20	W19	FM-FAS	24.0	0.050	1140	\$30,329	5	11	3.5121
Totals				1.903		\$363,231			

34 Floyd

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C34-T096R16S36-RS06		Local	22.0	0.242	320	\$45,216	4	8	3.6152
Totals				0.242		\$45,216			

Table 13c : Printout of road segments that warrant Upgrade

35 Franklin

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C35-T091R22S31-RS11		Local	24.0	0.429	330	\$75,997	5	8	2.9462
C35-T091R22S32-RS05		Local	24.0	0.510	330	\$90,347	5	8	2.9462
C35-T090R20S06-RS13		Local	22.0	0.019	260	\$3,550	4	8	2.7443
Totals				0.958		\$169,894			

36 Fremont

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C36-T068R43S31-RS05		Local	22.0	0.193	200	\$36,061	4	8	2.1111
C36-T070R41S04-RS01		Local	16.0	1.001	30	\$126,026	1	5	2.4306
C36-T070R41S05-RS03		Local	12.0	0.242	30	\$30,468	1	5	2.4307
C36-T068R43S30-RS07		Local	22.0	0.037	200	\$6,913	4	8	2.1111
Totals				1.473		\$199,467			

37 Greene

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C37-T084R30S32-RS04		Local	22.0	0.771	1000	\$499,657	4	11	4.0352
C37-T085R31S33-RS04		FM	22.0	0.050	290	\$8,858	5	8	2.5888
Totals				0.821		\$508,514			

38 Grundy

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C38-T089R18S21-RS02		Local	22.0	0.752	25	\$94,677	1	5	2.0255
C38-T086R17S20-RS04		Local	24.0	0.603	40	\$96,320	1	6	2.8262
Totals				1.355		\$190,996			

39 Guthrie

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C39-T078R30S13-RS01	F61	FM	22.0	0.267	190	\$49,887	4	8	2.0055
C39-T080R30S30-RS03		Local	26.0	0.099	1980	\$58,377	6	11	4.9295
Totals				0.366		\$108,264			

40 Hamilton

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C40-T087R23S32-RS04		Local	22.0	0.497	330	\$92,861	4	8	3.7281
C40-T087R23S32-RS02		Local	22.0	0.497	330	\$92,861	4	8	3.7281
C40-T088R25S05-RS06		Local	22.0	0.298	320	\$55,679	4	8	3.6151
Totals				1.292		\$241,400			

41 Hancock

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C41-T095R25S16-RS03		Local	22.0	0.230	940	\$141,743	4	11	3.7931
C41-T095R24S03-RS04		FM	22.0	1.112	410	\$207,769	4	8	4.8322
C41-T097R25S03-RS04		Local	22.0	0.037	1150	\$22,802	4	11	4.6405
C41-T096R23S36-RS04	R70	FM	24.0	0.497	440	\$88,044	5	8	4.1034
C41-T096R25S15-RS01	B30	FM	34.0	1.001	1020	\$590,254	6	11	2.1889
C41-T097R23S35-RS04		Local	20.0	1.001	380	\$187,029	4	8	4.2929
C41-T097R24S01-RS06		Local	22.0	0.702	600	\$432,624	4	11	2.2468
C41-T095R26S26-RS02		Local	22.0	1.001	940	\$616,889	4	11	3.7931
C41-T097R24S11-RS03		Local	24.0	0.398	370	\$70,506	5	8	3.3033
C41-T095R24S19-RS01		Local	22.0	0.982	230	\$183,479	4	8	2.4278
C41-T094R23S13-RS02	R70	FM	24.0	1.001	430	\$177,327	5	8	4.0102
C41-T096R26S36-RS02	R26	Local	24.0	0.280	520	\$49,602	5	8	4.8495
C41-T094R25S11-RS02		Local	22.0	1.001	380	\$187,029	4	8	4.2929
C41-T096R26S34-RS02		Local	28.0	0.510	400	\$81,719	6	8	2.7325
C41-T096R23S25-RS01		FM	24.0	1.050	360	\$186,008	5	8	3.2140
C41-T094R23S19-RS03		Local	22.0	1.001	410	\$187,029	4	8	4.8322
C41-T094R26S08-RS01		Local	26.0	1.001	300	\$177,327	5	8	2.6783
C41-T094R25S03-RS01		Local	22.0	1.001	270	\$187,029	4	8	3.0503
C41-T096R26S34-RS04		Local	22.0	0.491	210	\$91,740	4	8	2.2167
C41-T096R24S12-RS04		Local	22.0	1.001	190	\$187,029	4	8	2.0055
Totals				15.298		\$4,052,978			

42 Hardin

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C42-T089R19S36-RS09		Local	26.0	0.099	300	\$17,538	5	8	2.6785
C42-T089R21S24-RS05		FM-FAS+	26.0	0.118	440	\$20,904	5	8	4.1035
C42-T089R20S17-RS07		Local	28.0	0.099	390	\$15,863	6	8	2.5466
C42-T089R20S20-RS02		FM-FAS	32.0	0.143	560	\$22,913	6	8	3.8255
C42-T089R20S19-RS05		Local	26.0	0.858	1510	\$520,447	5	11	4.9577
C42-T089R20S20-RS04		FM-FAS	32.0	0.342	560	\$54,800	6	8	3.8255
C42-T089R21S02-RS04		Local	18.0	0.149	30	\$18,759	1	5	2.4313
C42-T089R20S20-RS05		Local	26.0	0.249	400	\$44,110	5	8	3.7304
C42-T088R19S29-RS07		FM	26.0	0.907	330	\$160,675	5	8	2.9462
C42-T088R19S31-RS08		FM	26.0	0.609	330	\$107,885	5	8	2.9462
C42-T089R21S06-RS01		Local	26.0	0.062	500	\$9,934	6	8	3.4157
C42-T086R19S05-RS03		Local	20.0	0.298	290	\$55,679	4	8	3.2762
C42-T089R21S14-RS11	S33	FM-FAS	26.0	0.168	280	\$29,761	5	8	2.4999
C42-T088R19S28-RS03		Local	18.0	0.149	980	\$91,825	4	11	3.9544
C42-T088R19S03-RS03		Local	24.0	0.249	760	\$151,039	5	11	2.1696
C42-T088R19S32-RS03		FM	26.0	0.392	330	\$69,443	5	8	2.9462
C42-T089R21S22-RS03	S33	FM	26.0	1.069	280	\$189,374	5	8	2.4998
C42-T089R20S20-RS03		Local	28.0	0.603	390	\$96,621	6	8	2.5466
C42-T089R21S23-RS01	S33	FM-FAS	26.0	0.522	280	\$92,472	5	8	2.4998
C42-T088R19S28-RS07		FM	26.0	0.149	330	\$26,395	5	8	2.9462
Totals				7.234		\$1,796,437			

43 Harrison

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C43-T081R45S26-RS03		Local	20.0	0.037	70	\$8,583	1	8	3.7539
C43-T078R44S22-RS07		Local	24.0	0.248	720	\$150,432	5	11	2.0554
C43-T081R41S01-RS05		Local	22.0	0.789	230	\$147,419	4	8	2.4278
C43-T078R44S02-RS10		Local	20.0	0.758	250	\$141,626	4	8	2.6389
C43-T078R44S21-RS03		Local	24.0	0.702	320	\$181,135	5	8	2.8569
C43-T079R43S13-RS06		Local	22.0	0.071	750	\$43,755	4	11	2.8085
C43-T080R42S14-RS07		FM	26.0	0.199	160	\$41,249	3	8	3.0429
C43-T078R44S22-RS05		Local	24.0	0.062	320	\$10,983	5	8	2.8571
C43-T079R43S13-RS08		Local	20.0	0.074	750	\$45,604	4	11	2.8086
C43-T078R44S11-RS06		Local	28.0	0.833	320	\$133,474	6	8	2.0895
C43-T081R41S02-RS03		Local	22.0	0.410	230	\$76,605	4	8	2.4278
Totals				4.183		\$980,867			

44 Henry

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C44-T072R07S11-RS03		FM	22.0	0.031	210	\$5,792	4	8	2.2165
C44-T071R05S35-RS08		FM	22.0	0.298	630	\$183,649	4	11	2.3591
C44-T071R06S20-RS15		Local	22.0	0.143	400	\$26,718	4	8	4.7144

Table 13c : Printout of road segments that warrant Upgrade

C44-T071R06S11-RS03		Local	20.0	0.287	290	\$53,624	4	8	3.2762
C44-T070R05S02-RS01		Local	22.0	0.528	410	\$98,653	4	8	4.8322
C44-T072R05S16-RS04		FM-FAS	22.0	1.013	250	\$189,271	4	8	2.6389
C44-T071R07S24-RS19		FM	22.0	0.131	230	\$24,476	4	8	2.4277
C44-T073R05S22-RS03		Local	22.0	0.677	300	\$126,492	4	8	3.3892
C44-T071R07S13-RS05		Local	18.0	0.360	250	\$67,263	4	8	2.6389
C44-T071R06S19-RS05		Local	22.0	0.168	390	\$31,390	4	8	4.4059
C44-T071R05S32-RS04		Local	22.0	0.758	250	\$190,976	4	8	2.6389
C44-T073R07S10-RS06		FM	24.0	0.497	290	\$88,044	5	8	2.5891
C44-T073R06S11-RS03	H14	FM	22.0	1.038	190	\$193,942	4	8	2.0055
C44-T072R07S32-RS06		FM	22.0	0.982	320	\$453,749	4	8	3.6151
C44-T071R06S17-RS01		Local	20.0	0.249	660	\$153,452	4	11	2.4715
C44-T071R07S23-RS03		FM	22.0	1.100	230	\$205,527	4	8	2.4278
C44-T071R06S18-RS05		Local	22.0	0.901	250	\$236,610	4	8	2.6389
C44-T073R06S10-RS03	H14	FM	22.0	0.733	210	\$136,955	4	8	2.2166
C44-T072R06S32-RS07		FM	22.0	0.218	250	\$40,732	4	8	2.6388
C44-T073R05S17-RS01	H14	FM	26.0	1.013	280	\$179,453	5	8	2.4998
C44-T071R05S32-RS06		Local	22.0	0.261	210	\$64,516	4	8	2.2167
C44-T071R07S24-RS03		Local	18.0	0.267	250	\$49,887	4	8	2.6389
C44-T071R07S24-RS17		Local	20.0	0.721	390	\$134,713	4	8	4.4059
C44-T073R07S10-RS03		Local	24.0	0.510	350	\$90,347	5	8	3.1247
C44-T070R05S05-RS04		Local	22.0	0.510	210	\$95,290	4	8	2.2167
C44-T072R05S28-RS04		FM-FAS	22.0	1.019	250	\$190,392	4	8	2.6389
C44-T071R06S11-RS07		Local	20.0	0.510	290	\$95,290	4	8	3.2762
C44-T071R06S18-RS03		Local	26.0	0.497	250	\$88,044	5	8	2.0652
C44-T071R06S20-RS03		Local	22.0	0.112	400	\$20,926	4	8	4.7144
C44-T070R05S04-RS03		Local	22.0	0.920	200	\$171,895	4	8	2.1111
C44-T072R06S33-RS01		FM	22.0	0.528	250	\$98,653	4	8	2.6389
C44-T071R05S35-RS06		FM	22.0	0.114	630	\$70,255	4	11	2.3591
C44-T072R05S33-RS04		FM-FAS	22.0	1.050	280	\$196,184	4	8	3.1632
C44-T072R05S21-RS04		FM-FAS	22.0	1.001	250	\$187,029	4	8	2.6389
C44-T072R05S09-RS04		FM-FAS	22.0	1.013	250	\$189,271	4	8	2.6389
C44-T071R07S27-RS05	H46	FM	20.0	0.249	200	\$46,524	4	8	2.1111
C44-T071R07S22-RS05		FM	22.0	0.659	190	\$123,129	4	8	2.0056
C44-T071R06S22-RS04		Local	24.0	0.073	280	\$12,932	5	8	2.4999
C44-T073R07S09-RS02		Local	22.0	0.423	210	\$79,034	4	8	2.2167
C44-T071R06S05-RS05		Local	18.0	0.031	670	\$19,104	4	11	2.5089
C44-T071R05S29-RS04		Local	22.0	1.001	250	\$187,029	4	8	2.6389
C44-T073R05S16-RS05	H14	FM	22.0	0.491	240	\$91,740	4	8	2.5334
C44-T070R05S14-RS03		FM	20.0	0.118	220	\$22,047	4	8	2.3221
C44-T073R07S09-RS04		Local	22.0	0.572	190	\$106,874	4	8	2.0055
C44-T071R05S20-RS06		Local	22.0	0.603	250	\$112,666	4	8	2.6389
C44-T070R05S05-RS07		Local	22.0	0.497	200	\$92,861	4	8	2.1111
C44-T071R07S26-RS03	H46	FM	20.0	1.013	200	\$189,271	4	8	2.1111
C44-T071R07S22-RS07		FM	22.0	0.249	230	\$46,524	4	8	2.4278
C44-T070R05S24-RS05	X30	FM-FAS	24.0	0.497	300	\$88,044	5	8	2.6784
C44-T070R05S13-RS02		FM	20.0	0.491	220	\$91,740	4	8	2.3222
C44-T070R05S02-RS04		FM	20.0	1.249	220	\$233,366	4	8	2.3222
C44-T070R05S24-RS03		FM	24.0	0.541	300	\$95,838	5	8	2.6784
C44-T070R05S11-RS06		FM	22.0	1.001	220	\$226,952	4	8	2.3222
C44-T071R05S35-RS04		FM	22.0	0.588	630	\$362,369	4	11	2.3591
C44-T071R07S05-RS06		FM	22.0	0.099	190	\$18,497	4	8	2.0057
C44-T073R05S15-RS01	H14	FM	22.0	1.001	240	\$219,369	4	8	2.5333
C44-T071R06S17-RS05		Local	22.0	0.131	400	\$24,476	4	8	4.7144
C44-T071R06S12-RS03		Local	20.0	1.001	290	\$187,029	4	8	3.2762
Totals				32.736		\$7,106,875			

45 Howard

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C45-T099R11S34-RS14		FM	26.0	0.162	280	\$28,698	5	8	2.4997
C45-T098R11S03-RS02		FM	25.0	0.479	280	\$84,855	5	8	2.4998
Totals				0.641		\$113,553			

46 Humboldt

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C46-T092R28S32-RS03		Local	26.0	0.622	480	\$110,188	5	8	4.4765
C46-T093R27S36-RS03	C26	Local	22.0	0.497	200	\$92,861	4	8	2.1111
Totals				1.119		\$203,048			

47 Ida

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C47-T089R39S35-RS05		Local	24.0	0.248	310	\$39,738	6	8	2.0242
Totals				0.248		\$39,738			

48 Iowa

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C48-T081R09S23-RS04		Local	18.0	0.062	200	\$11,584	4	8	2.1111
C48-T079R10S04-RS06		Local	22.0	0.081	400	\$15,134	4	8	4.7144
C48-T080R11S02-RS03	V60	FM	26.0	0.305	330	\$54,031	5	8	2.9462
C48-T080R10S01-RS06		FM	22.0	0.081	420	\$15,134	4	8	4.9499
C48-T078R10S10-RS06	V77	FM	26.0	0.578	270	\$102,393	5	8	2.4105
C48-T078R10S10-RS04	V77	FM	24.0	0.162	270	\$28,698	5	8	2.4105
C48-T081R11S36-RS04	V62	FM	30.0	0.839	360	\$134,436	6	8	2.3507
C48-T081R09S09-RS04	W22	FM	26.0	0.249	250	\$162,723	5	8	2.0652
C48-T079R09S04-RS03		Local	26.0	1.000	300	\$177,150	5	8	2.6784
C48-T080R09S11-RS06		Local	18.0	0.047	410	\$8,782	4	8	4.8325
C48-T078R10S15-RS02	V77	FM	26.0	0.988	270	\$175,025	5	8	2.4105
C48-T080R10S33-RS03		FM	22.0	0.050	270	\$9,342	4	8	3.0506
C48-T079R10S04-RS04		Local	22.0	0.099	400	\$18,497	4	8	4.7144
C48-T080R12S19-RS06		Local	24.0	0.342	1030	\$207,451	5	11	3.1732
C48-T080R12S19-RS12		Local	24.0	0.149	1030	\$90,381	5	11	3.1732
C48-T081R09S15-RS05		Local	24.0	0.242	260	\$42,870	5	8	2.1478
C48-T079R11S13-RS03	F46	FM-FAS	30.0	0.578	350	\$92,615	6	8	2.2854
Totals				5.852		\$1,346,246			

49 Jackson

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C49-T086RE2S19-RS07		Local	20.0	0.740	280	\$138,263	4	8	3.1632
C49-T086RE1S13-RS04		Local	18.0	0.640	280	\$119,579	4	8	3.1632
C49-T087RE4S25-RS04		FM	24.0	0.180	450	\$31,887	5	8	4.1967
C49-T087RE4S25-RS06		FM	24.0	0.441	450	\$78,123	5	8	4.1967
C49-T084RE3S07-RS03		FM	24.0	0.988	430	\$175,025	5	8	4.0102
C49-T087RE4S32-RS03		Local	14.0	0.112	210	\$20,926	4	8	2.2167
C49-T084RE3S21-RS02		Local	16.0	1.001	230	\$187,029	4	8	2.4278
C49-T084RE3S09-RS01		FM	26.0	0.740	430	\$131,091	5	8	4.0102
C49-T087RE3S32-RS05		FM-FAS	22.0	0.659	210	\$123,129	4	8	2.2166
C49-T084RE5S19-RS03		FM	22.0	0.497	230	\$92,861	4	8	2.4278
C49-T087RE3S28-RS02		Local	18.0	0.267	45	\$42,649	1	6	3.1791
C49-T086RE1S24-RS05		Local	18.0	0.883	280	\$164,982	4	8	3.1632
C49-T086RE2S29-RS04		FM	22.0	0.118	220	\$22,047	4	8	2.3221
C49-T087RE4S32-RS05		Local	16.0	0.988	210	\$204,795	3	8	4.3088
C49-T084RE4S11-RS03		Local	16.0	0.249	40	\$39,774	1	6	2.8259
C49-T084RE3S08-RS05		FM	24.0	0.479	430	\$84,855	5	8	4.0102
C49-T086RE1S24-RS03		Local	20.0	0.261	280	\$48,766	4	8	3.1632

Table 13c : Printout of road segments that warrent Upgrade

C49-T087RE3S21-RS04	Local	18.0	0.218	45	\$34,822	1	6	3.1797
C49-T084RE3S08-RS03	FM	24.0	0.572	430	\$101,330	5	8	4.0102
C49-T086RE2S19-RS04	FM	32.0	0.808	340	\$129,469	6	8	2.2201
C49-T087RE4S33-RS03	Local	22.0	0.690	210	\$128,921	4	8	2.2166
C49-T087RE3S32-RS07	FM-FAS	22.0	0.068	210	\$12,705	4	8	2.2166
C49-T084RE3S16-RS04	Local	16.0	0.143	230	\$26,718	4	8	2.4278
C49-T084RE3S07-RS04	FM	24.0	0.292	430	\$51,728	5	8	4.0102
C49-T084RE5S20-RS03	FM	22.0	0.261	230	\$48,766	4	8	2.4278
C49-T086RE2S30-RS03	Local	16.0	0.081	280	\$15,134	4	8	3.1631
C49-T087RE4S32-RS07	Local	14.0	0.099	210	\$18,497	4	8	2.2166
C49-T086RE2S30-RS04	FM	22.0	0.709	220	\$132,471	4	8	2.3222
Totals			13.184		\$2,406,344			

50 Jasper

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C50-T078R19S31-RS05	F70	FM	26.0	0.528	360	\$93,535	5	8	3.2140
C50-T081R20S14-RS08		FM	30.0	0.211	310	\$33,809	6	8	2.0242
C50-T078R19S32-RS05	F70	FM	26.0	0.510	360	\$90,347	5	8	3.2140
C50-T081R20S20-RS03	F17	FM-FAS+	26.0	0.249	1220	\$151,039	5	11	3.7586
C50-T081R20S22-RS01	F17	FM-FAS+	26.0	0.497	1220	\$301,471	5	11	3.7585
C50-T081R20S22-RS03	F17	FM-FAS+	26.0	0.120	1220	\$72,790	5	11	3.7585
C50-T079R19S06-RS02	S60	FM	24.0	0.497	380	\$88,044	5	8	3.3926
C50-T081R20S26-RS06		FM	22.0	0.870	290	\$162,553	4	8	3.2762
C50-T080R20S35-RS08		Local	22.0	0.497	200	\$92,861	4	8	2.1111
C50-T080R19S32-RS02		Local	20.0	0.249	300	\$46,524	4	8	3.3892
C50-T079R19S22-RS02		Local	20.0	0.062	350	\$11,584	4	8	3.9538
C50-T081R20S21-RS01	F17	FM-FAS+	26.0	1.019	1220	\$618,106	5	11	3.7586
C50-T080R17S16-RS11		FM	22.0	0.261	190	\$48,766	4	8	2.0055
C50-T078R21S01-RS03		FM	22.0	0.677	210	\$126,492	4	8	2.2167
C50-T079R18S20-RS04	T14	FM-FAS	22.0	0.218	190	\$40,732	4	8	2.0055
C50-T079R18S17-RS06	T14	FM-FAS	22.0	0.249	190	\$46,524	4	8	2.0055
C50-T081R20S19-RS01	F17	FM-FAS+	26.0	0.982	1220	\$643,633	5	11	3.7586
C50-T079R20S02-RS06		Local	22.0	0.528	200	\$98,653	4	8	2.1111
C50-T081R21S23-RS03	F17	FM-FAS+	26.0	0.249	1220	\$151,039	5	11	3.7586
C50-T078R21S02-RS05		Local	22.0	0.087	280	\$16,255	4	8	3.1631
C50-T079R19S14-RS01	F48	FM	24.0	0.497	270	\$88,044	5	8	2.4105
C50-T078R19S33-RS05	F70	FM	26.0	1.032	280	\$182,819	5	8	2.4998
C50-T080R17S16-RS09		FM	22.0	0.690	200	\$128,921	4	8	2.1111
C50-T079R18S17-RS04	T14	FM-FAS	22.0	0.603	220	\$112,666	4	8	2.3222
C50-T079R19S15-RS02		Local	20.0	1.001	350	\$187,029	4	8	3.9540
C50-T080R18S23-RS05		FM	22.0	0.497	310	\$92,861	4	8	3.5022
C50-T079R19S22-RS04		Local	20.0	0.938	250	\$175,258	4	8	2.6389
C50-T079R18S07-RS07	T14	FM-FAS	22.0	0.118	800	\$72,720	4	11	2.9957
C50-T078R21S02-RS01		Local	22.0	0.087	280	\$16,255	4	8	3.1631
C50-T079R19S05-RS11		Local	22.0	0.590	340	\$156,204	4	8	3.8410
C50-T079R19S05-RS07		Local	22.0	0.081	2000	\$46,476	7	11	2.5623
C50-T079R19S01-RS03		FM-FAS	22.0	0.298	210	\$55,679	4	8	2.2167
C50-T078R21S03-RS05		Local	24.0	0.429	280	\$75,997	5	8	2.4998
C50-T079R19S05-RS09		Local	22.0	0.249	340	\$46,524	4	8	3.8411
C50-T081R21S23-RS05	F17	FM-FAS+	26.0	0.510	1220	\$309,356	5	11	3.7585
C50-T081R21S22-RS03	F17	FM-FAS+	26.0	0.497	1220	\$301,471	5	11	3.7585
C50-T079R18S18-RS12	T14	FM-FAS	22.0	0.261	220	\$48,766	4	8	2.3222
C50-T081R21S23-RS01	F17	FM-FAS+	26.0	0.249	1220	\$151,039	5	11	3.7586
C50-T081R21S22-RS05	F17	FM-FAS+	26.0	0.249	1220	\$151,039	5	11	3.7586
C50-T078R21S02-RS03		Local	22.0	0.410	280	\$76,605	4	8	3.1632
C50-T079R18S08-RS04	T14	FM-FAS	22.0	0.988	220	\$184,600	4	8	2.3222
C50-T079R19S06-RS03		Local	22.0	1.019	380	\$329,292	4	8	4.2929
C50-T081R20S15-RS03		Local	24.0	0.609	290	\$107,885	5	8	2.5891
C50-T081R20S14-RS06		FM	30.0	0.242	310	\$38,776	6	8	2.0242
C50-T081R20S20-RS01	F17	FM-FAS+	26.0	0.752	1220	\$456,149	5	11	3.7586
C50-T079R19S01-RS04		FM-FAS	22.0	0.081	230	\$15,134	4	8	2.4278
C50-T078R19S32-RS07	F70	FM	26.0	0.497	320	\$88,044	5	8	2.8569
C50-T079R18S08-RS03	F48	FM	22.0	0.659	220	\$123,129	4	8	2.3222
C50-T079R19S06-RS04	S60	FM	24.0	0.249	380	\$44,110	5	8	3.3926
C50-T081R20S36-RS01		Local	22.0	0.988	190	\$184,600	4	8	2.0056
C50-T081R20S35-RS03		Local	22.0	0.280	190	\$112,421	4	8	2.0056
C50-T081R20S26-RS08		Local	22.0	0.193	190	\$36,061	4	8	2.0056
C50-T079R21S12-RS10		Local	22.0	0.019	240	\$3,550	4	8	2.5327
C50-T081R21S24-RS01	F17	FM-FAS+	26.0	1.001	1220	\$636,633	5	11	3.7585
C50-T081R20S11-RS04		FM	30.0	1.001	310	\$160,394	6	8	2.0242
C50-T079R18S08-RS01	T14	FM-FAS	22.0	0.348	420	\$65,021	4	8	4.9500
C50-T079R18S07-RS05	T14	FM-FAS	22.0	0.037	800	\$68,822	4	11	2.9957
C50-T080R21S13-RS01		FM	22.0	0.758	200	\$141,626	4	8	2.1111
C50-T081R20S23-RS04		FM	22.0	0.988	390	\$184,600	4	8	4.4059
C50-T081R21S22-RS01	F17	FM-FAS+	26.0	0.249	1220	\$151,039	5	11	3.7586
C50-T080R21S13-RS03		FM	22.0	0.249	200	\$46,524	4	8	2.1111
Totals				29.053		\$8,588,895			

51 Jefferson

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C51-T071R10S01-RS07		Local	22.0	0.337	200	\$62,966	4	8	2.1111
C51-T072R09S19-RS03	H28	Local	22.0	0.031	290	\$5,792	4	8	3.2758
C51-T071R11S18-RS05		Local	24.0	0.528	250	\$93,535	5	8	2.0652
C51-T072R10S03-RS08		FM	20.0	1.268	320	\$236,916	4	8	3.6151
C51-T071R10S01-RS05		Local	22.0	0.570	200	\$106,500	4	8	2.1111
C51-T071R10S17-RS05		FM	28.0	0.628	360	\$100,627	6	8	2.3507

Table 13c : Printout of road segments that warrent Upgrade

Totals	3.362	\$606,336
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52 Johnson

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C52-T081R06S28-RS06		FM-FAS	22.0	0.510	1860	\$304,628	7	11	2.2135
C52-T079R07S01-RS06		Local	26.0	0.298	410	\$52,791	5	8	3.8237
C52-T077R05S15-RS05		Local	22.0	0.510	270	\$95,290	4	8	3.0502
C52-T079R05S05-RS04		Local	20.0	0.317	200	\$59,229	4	8	2.1111
C52-T079R05S17-RS04		Local	22.0	0.124	300	\$23,168	4	8	3.3892
C52-T079R06S33-RS03		Local	22.0	0.050	220	\$9,342	4	8	2.3222
C52-T079R05S31-RS04		Local	24.0	0.162	710	\$98,266	5	11	2.0268
C52-T079R07S01-RS02		Local	26.0	0.851	410	\$150,755	5	8	3.8237
C52-T080R05S19-RS07		Local	18.0	0.820	360	\$153,211	4	8	4.0670
C52-T080R06S19-RS11		FM	22.0	0.062	1720	\$35,574	7	11	2.0469
C52-T078R08S31-RS05		FM	22.0	0.065	200	\$12,145	4	8	2.1111
C52-T079R05S17-RS10		Local	22.0	0.242	300	\$45,216	4	8	3.3892
C52-T081R07S24-RS04	W4F	FM	24.0	0.081	2000	\$46,476	7	11	2.5623
C52-T079R05S08-RS06		Local	22.0	0.083	250	\$15,508	4	8	2.6390
C52-T080R06S30-RS08		FM-FAS	22.0	0.131	1720	\$75,165	7	11	2.0469
C52-T081R07S11-RS03	W4F	FM	24.0	0.230	2480	\$131,969	7	11	3.1773
C52-T081R07S14-RS04	W4F	FM	24.0	0.423	2090	\$242,709	7	11	2.6776
C52-T081R08S22-RS03	F20	FM-FAS	22.0	0.199	190	\$37,182	4	8	2.0056
C52-T080R07S27-RS06		Local	22.0	0.150	280	\$130,485	5	8	2.4998
C52-T079R07S12-RS06		Local	20.0	0.622	410	\$110,188	5	8	3.8237
C52-T079R06S29-RS04		Local	24.0	1.001	760	\$607,188	5	11	2.1696
C52-T079R06S20-RS12		Local	24.0	0.162	760	\$98,266	5	11	2.1696
C52-T081R07S14-RS03	W4F	FM	24.0	0.628	2480	\$360,334	7	11	3.1773
C52-T079R05S08-RS02		Local	22.0	0.491	250	\$91,740	4	8	2.6389
C52-T079R06S30-RS02		FM	20.0	0.193	210	\$36,061	4	8	2.2166

Table 13c : Printout of road segments that warrant Upgrade

C52-T081R07S23-RS04	W4F	FM	24.0	0.311	2010	\$178,446	7	11	2.5751
C52-T081R05S22-RS03		FM	22.0	1.231	260	\$230,003	4	8	2.7444
C52-T080R06S34-RS06	W66	FM-FAS	48.0	0.050	13100	\$63,397	10	14	3.0188
C52-T080R06S30-RS04		FM-FAS	22.0	0.087	1720	\$49,919	7	11	2.0469
C52-T078R08S31-RS07		FM	20.0	0.370	190	\$69,132	4	8	2.0056
C52-T080R08S20-RS11		Local	22.0	0.528	200	\$98,653	4	8	2.1111
C52-T080R05S21-RS04		Local	22.0	0.162	360	\$30,268	4	8	4.0670
C52-T080R07S34-RS04		Local	22.0	0.222	280	\$39,327	5	8	2.4998
C52-T080R06S19-RS09		FM	22.0	0.047	1720	\$26,968	7	11	2.0469
C52-T081R05S23-RS05		FM	22.0	0.510	190	\$95,290	4	8	2.0055
C52-T079R06S19-RS04		FM	22.0	0.513	210	\$95,850	4	8	2.2166
C52-T081R07S07-RS04		FM	22.0	0.920	250	\$171,895	4	8	2.6389
C52-T078R06S26-RS04	W66	FM-FAS	22.0	0.528	2110	\$302,956	7	11	2.7033
C52-T079R06S34-RS01		Local	22.0	0.168	220	\$31,390	4	8	2.3222
C52-T080R05S26-RS06		Local	20.0	0.740	30	\$93,166	1	5	2.4306
C52-T080R06S07-RS05		Local	22.0	0.214	1190	\$131,882	4	11	4.8018
C52-T080R07S34-RS06		Local	22.0	0.350	280	\$62,003	5	8	2.4998
C52-T081R07S16-RS03		Local	20.0	0.249	200	\$88,711	4	8	2.1111
C52-T078R06S35-RS04	W66	FM-FAS	22.0	1.019	2110	\$584,682	7	11	2.7033
C52-T078R08S29-RS05		FM	20.0	0.653	290	\$122,008	4	8	3.2762
C52-T080R05S20-RS05		Local	22.0	1.088	360	\$239,284	4	8	4.0670
C52-T081R05S23-RS03		FM	22.0	0.528	230	\$144,230	4	8	2.4278
C52-T081R08S10-RS04	W42	FM	24.0	1.013	250	\$179,453	5	8	2.0652
C52-T078R08S32-RS07		FM	20.0	0.348	200	\$65,021	4	8	2.1111
C52-T077R06S02-RS04	W66	FM-FAS	22.0	1.032	2110	\$727,329	7	11	2.7033
C52-T080R06S30-RS06		FM-FAS	22.0	0.062	1720	\$35,574	7	11	2.0469
C52-T079R05S32-RS04		Local	24.0	0.169	710	\$102,512	5	11	2.0268
C52-T078R06S21-RS06		Local	24.0	0.690	310	\$122,234	5	8	2.7676
C52-T079R05S08-RS04		Local	22.0	0.085	250	\$15,882	4	8	2.6388
C52-T079R06S34-RS03		Local	22.0	0.112	220	\$20,926	4	8	2.3223
C52-T080R06S07-RS07		Local	22.0	0.242	1190	\$149,138	4	11	4.8019
C52-T078R06S25-RS04	W66	FM-FAS	22.0	0.522	2110	\$299,513	7	11	2.7033
C52-T078R08S32-RS09		FM	20.0	0.087	290	\$78,355	4	8	3.2762
C52-T080R06S08-RS04		Local	22.0	0.547	1190	\$337,101	4	11	4.8018
C52-T080R06S08-RS06		Local	22.0	0.139	1190	\$85,662	4	11	4.8019
C52-T080R07S35-RS03		Local	26.0	0.875	1210	\$530,759	5	11	3.7277
C52-T080R07S36-RS06		Local	22.0	0.230	410	\$102,852	5	8	3.8237
C52-T079R05S17-RS02		Local	22.0	0.180	300	\$33,632	4	8	3.3892
C52-T081R05S28-RS03		FM	22.0	0.491	260	\$91,740	4	8	2.7444
C52-T078R06S24-RS04	W66	FM-FAS	24.0	1.019	2110	\$704,419	7	11	2.7033
C52-T079R05S17-RS08		Local	22.0	0.162	300	\$30,268	4	8	3.3892
C52-T079R07S14-RS06		Local	28.0	0.491	460	\$78,675	6	8	3.1424
C52-T080R06S17-RS06		Local	22.0	0.771	270	\$144,055	4	8	3.0502
C52-T080R05S28-RS02		Local	22.0	0.193	360	\$36,061	4	8	4.0670
C52-T079R05S30-RS02		Local	26.0	1.032	250	\$182,819	5	8	2.0652
C52-T079R05S17-RS06		Local	22.0	0.292	300	\$54,558	4	8	3.3892
C52-T079R05S08-RS08		Local	22.0	0.329	300	\$61,471	4	8	3.3892
C52-T078R06S21-RS08		Local	22.0	0.143	230	\$26,718	4	8	2.4278
C52-T081R06S36-RS07	F28	Local	22.0	0.056	230	\$10,463	4	8	2.4277
C52-T079R06S20-RS08		Local	24.0	0.099	760	\$60,052	5	11	2.1696
C52-T079R05S31-RS02		Local	20.0	1.038	230	\$220,605	4	8	2.4278
C52-T081R07S14-RS06	W4F	FM	24.0	0.230	2000	\$131,969	7	11	2.5623
C52-T081R05S24-RS03		FM	22.0	0.541	190	\$101,082	4	8	2.0055
C52-T078R08S32-RS05		FM	20.0	0.267	200	\$49,887	4	8	2.1111
Totals				32.380		\$10,843,128			

53 Jones

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C53-T085R04S33-RS10		Local	20.0	0.081	260	\$15,134	4	8	2.7445
C53-T085R04S27-RS04		Local	20.0	0.162	260	\$30,268	4	8	2.7445
C53-T085R04S29-RS04		Local	22.0	1.280	220	\$239,158	4	8	2.3222
C53-T085R04S27-RS02		Local	20.0	0.479	260	\$89,497	4	8	2.7444
C53-T085R04S32-RS06		Local	22.0	0.957	220	\$178,808	4	8	2.3222
C53-T086R03S23-RS02		Local	28.0	0.199	380	\$31,886	6	8	2.4812
C53-T085R04S34-RS02		Local	20.0	0.423	260	\$79,034	4	8	2.7445
C53-T085R04S22-RS08		Local	20.0	0.081	260	\$15,134	4	8	2.7445
C53-T085R04S33-RS08		Local	16.0	0.552	260	\$103,137	4	8	2.7445
C53-T086R04S10-RS08		Local	26.0	0.062	500	\$10,983	5	8	4.6630
C53-T086R03S20-RS04		Local	22.0	1.019	260	\$190,392	4	8	2.7444
C53-T086R03S17-RS04		Local	22.0	0.783	260	\$319,398	4	8	2.7445
C53-T085R04S28-RS06		Local	20.0	0.280	260	\$52,316	4	8	2.7444
C53-T085R04S28-RS04		Local	20.0	0.112	260	\$20,926	4	8	2.7445
C53-T083R02S18-RS03		FM	22.0	0.839	200	\$243,783	4	8	2.1111
Totals				7.309		\$1,619,857			

54 Keokuk

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C54-T076R13S15-RS03		FM	22.0	0.497	240	\$92,861	4	8	2.5333
C54-T076R13S10-RS03		Local	26.0	0.497	270	\$88,044	5	8	2.4105
C54-T074R13S18-RS03	G65	FM-FAS	22.0	0.951	190	\$177,687	4	8	2.0056
C54-T074R11S10-RS03		FM	20.0	0.398	250	\$144,263	4	8	2.6389
C54-T074R10S34-RS06		FM	26.0	0.497	360	\$88,044	5	8	3.2140
C54-T074R11S11-RS03		FM	24.0	0.528	250	\$93,535	5	8	2.0652
C54-T074R11S12-RS07	V67	FM-FAS	22.0	0.497	250	\$92,861	4	8	2.6389
C54-T074R11S11-RS05	V67	FM-FAS	24.0	0.497	250	\$88,044	5	8	2.0652
C54-T074R11S12-RS05	V67	FM-FAS	24.0	0.497	250	\$88,044	5	8	2.0652
C54-T074R10S07-RS04		FM	22.0	0.497	200	\$100,256	4	8	2.1111
C54-T074R10S15-RS01		FM	20.0	1.001	190	\$187,029	4	8	2.0055
C54-T074R11S14-RS06	V67	FM-FAS	24.0	0.497	310	\$88,044	5	8	2.7677
C54-T074R10S07-RS02	V67	FM-FAS	22.0	0.497	290	\$92,861	4	8	3.2762
Totals				7.351		\$1,421,571			

55 Kossuth

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C55-T096R27S33-RS08		Local	18.0	0.068	410	\$12,705	4	8	4.8321
C55-T099R28S03-RS01		Local	22.0	0.050	390	\$9,342	4	8	4.4062
C55-T096R27S33-RS12		Local	18.0	0.037	410	\$6,913	4	8	4.8322
C55-T099R28S04-RS08		Local	18.0	0.342	250	\$63,900	4	8	2.6389
C55-T099R29S18-RS01		Local	26.0	0.951	450	\$168,470	5	8	4.1967
C55-T095R27S05-RS03		Local	22.0	0.062	370	\$11,584	4	8	4.1799
C55-T099R28S04-RS10		Local	18.0	0.087	250	\$16,255	4	8	2.6390
C55-T098R27S05-RS02		Local	16.0	0.883	35	\$111,170	1	5	2.8357
C55-T095R27S05-RS02		Local	22.0	0.037	370	\$6,913	4	8	4.1801
C55-T095R29S11-RS10		FM-FAS	22.0	0.037	920	\$22,802	4	11	3.7125
Totals				2.554		\$430,055			

56 Lee

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C56-T069R04S28-RS32		Local	20.0	0.062	230	\$11,584	4	8	2.4278
C56-T069R04S28-RS30		Local	22.0	0.771	230	\$144,055	4	8	2.4278
C56-T068R05S08-RS01	J56	FM-FAS	24.0	0.162	250	\$28,698	5	8	2.0651
C56-T068R05S25-RS03		FM	22.0	1.137	260	\$212,440	4	8	2.7444
C56-T066R05S15-RS03		Local	18.0	0.037	206	\$6,913	4	8	2.1744
C56-T068R05S27-RS03		FM	22.0	0.510	210	\$95,290	4	8	2.2167
C56-T068R05S26-RS05		FM	22.0	0.901	260	\$218,092	4	8	2.7444
C56-T069R03S31-RS04		Local	20.0	0.162	340	\$30,268	4	8	3.8410

Table 13c : Printout of road segments that warrent Upgrade

C56-T066R05S35-RS04		Local	26.0	0.294	410	\$74,702	5	8	3.8237
C56-T065R05S10-RS04		Local	28.0	0.578	430	\$149,615	6	8	2.9375
C56-T069R04S23-RS04		FM	20.0	0.547	230	\$102,203	4	8	2.4278
C56-T067R04S05-RS04		FM-FAS	20.0	0.062	860	\$37,608	5	11	2.4551
C56-T068R03S01-RS04		Local	18.0	0.131	30	\$16,493	1	5	2.4299
C56-T068R04S20-RS06		Local	22.0	0.031	220	\$5,792	4	8	2.3219
C56-T069R04S16-RS05		FM	20.0	0.292	230	\$54,558	4	8	2.4277
C56-T065R05S09-RS06		Local	18.0	0.062	190	\$11,584	4	8	2.0057
C56-T069R04S15-RS03		FM	20.0	0.970	230	\$181,237	4	8	2.4278
C56-T068R05S07-RS05	J56	FM-FAS	24.0	0.547	250	\$96,901	5	8	2.0652
C56-T067R05S06-RS04		FM	24.0	0.118	250	\$20,904	5	8	2.0653
C56-T066R05S33-RS05		FM	26.0	0.249	280	\$44,110	5	8	2.4998
C56-T068R04S29-RS06		Local	22.0	0.528	240	\$98,653	4	8	2.5333
C56-T068R06S02-RS04		Local	24.0	0.640	250	\$113,376	5	8	2.0652
C56-T069R04S25-RS05		Local	20.0	0.162	340	\$44,128	4	8	3.8410
C56-T068R04S20-RS08		Local	22.0	0.690	240	\$128,921	4	8	2.5333
C56-T068R06S30-RS04		Local	12.0	0.410	30	\$51,619	1	5	2.4309
C56-T069R04S25-RS09		Local	20.0	1.032	340	\$192,821	4	8	3.8410
C56-T068R04S24-RS09		Local	20.0	0.062	300	\$11,584	4	8	3.3892
C56-T068R03S06-RS06		Local	22.0	0.740	190	\$138,263	4	8	2.0056
C56-T067R05S05-RS08		FM	20.0	0.447	210	\$83,518	4	8	2.2167
C56-T067R06S20-RS03	J62	FM-FAS	26.0	1.001	360	\$177,327	5	8	3.2140
C56-T067R05S02-RS10		Local	24.0	0.230	300	\$40,745	5	8	2.6784
C56-T066R05S35-RS06		Local	24.0	0.628	410	\$111,250	5	8	3.8237
C56-T068R04S21-RS05		Local	22.0	0.099	190	\$18,497	4	8	2.0057
C56-T065R05S05-RS01		Local	20.0	0.244	420	\$45,590	4	8	4.9500
C56-T066R05S10-RS11		FM	26.0	0.354	340	\$62,711	5	8	3.0354
C56-T066R05S32-RS05		FM	26.0	1.019	280	\$180,516	5	8	2.4998
C56-T066R06S08-RS05		FM	22.0	0.068	330	\$12,705	4	8	3.7283
C56-T067R06S22-RS10		FM	20.0	0.062	210	\$11,584	4	8	2.2165
C56-T068R03S34-RS03	X50	Local	22.0	0.839	250	\$156,761	4	8	2.6389
C56-T066R06S08-RS03	W62	FM	22.0	0.951	330	\$177,687	4	8	3.7281

Table 13c : Printout of road segments that warrent Upgrade

C56-T067R05S06-RS06		FM	24.0	0.199	300	\$35,253	5	8	2.6783
C56-T066R05S36-RS04		Local	26.0	0.044	410	\$7,795	5	8	3.8239
C56-T068R05S26-RS03		FM	22.0	0.218	210	\$40,732	4	8	2.2167
C56-T068R05S22-RS05		FM	22.0	0.410	210	\$76,605	4	8	2.2166
C56-T069R04S29-RS10	J42	FM	20.0	0.081	220	\$15,134	4	8	2.3221
C56-T069R04S29-RS12	J42	FM	18.0	0.050	220	\$9,342	4	8	2.3222
C56-T065R05S06-RS03		Local	20.0	0.298	420	\$55,679	4	8	4.9500
C56-T065R05S20-RS03		FM	26.0	0.118	260	\$20,904	5	8	2.1478
C56-T067R05S05-RS06		FM	24.0	0.099	250	\$17,538	5	8	2.0653
C56-T067R07S24-RS03	J62	FM-FAS	26.0	0.988	300	\$175,025	5	8	2.6784
C56-T069R04S22-RS03		FM	20.0	0.087	230	\$16,255	4	8	2.4279
C56-T068R06S23-RS03		Local	22.0	0.062	220	\$11,584	4	8	2.3224
C56-T065R05S20-RS01		FM	26.0	0.329	260	\$58,282	5	8	2.1478
C56-T067R06S19-RS03	J62	FM-FAS	26.0	0.889	360	\$203,942	5	8	3.2140
C56-T068R05S07-RS03	J56	FM-FAS	24.0	0.249	250	\$44,110	5	8	2.0652
C56-T069R04S25-RS07		Local	20.0	0.019	340	\$3,550	4	8	3.8412
C56-T068R04S27-RS01		Local	22.0	0.690	190	\$128,921	4	8	2.0056
Totals				22.659		\$4,321,958			

57 Linn

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C57-T082R08S34-RS04	W42	FM-FAS	24.0	1.001	300	\$177,327	5	8	2.6783
C57-T082R08S11-RS10		FM-FAS	22.0	0.272	220	\$50,821	4	8	2.3223
C57-T082R06S20-RS03	W8E	FM	24.0	0.398	310	\$70,506	5	8	2.7677
C57-T085R06S24-RS05	E28	FM-FAS	26.0	0.982	300	\$217,312	5	8	2.6784
C57-T083R06S19-RS04		Local	20.0	0.099	290	\$18,497	4	8	3.2761
C57-T084R06S30-RS16		Local	22.0	0.118	300	\$22,047	4	8	3.3892
C57-T084R06S33-RS05		Local	24.0	0.261	280	\$46,236	5	8	2.4998
C57-T086R06S19-RS07		Local	10.0	0.050	40	\$7,987	1	6	2.8262
C57-T083R06S07-RS08		FM-FAS+	24.0	0.162	13100	\$205,405	10	14	3.0188
C57-T083R08S27-RS02		Local	22.0	1.001	270	\$187,029	4	8	3.0503
C57-T084R08S12-RS04		Local	24.0	0.379	250	\$67,140	5	8	2.0652
C57-T086R07S12-RS04		Local	22.0	1.001	210	\$187,029	4	8	2.2167
C57-T084R08S17-RS05		Local	24.0	0.329	280	\$58,282	5	8	2.4998
C57-T084R07S18-RS14		Local	22.0	0.131	260	\$23,207	5	8	2.1478
C57-T084R08S17-RS06		Local	24.0	0.242	340	\$130,920	5	8	3.0355
C57-T084R06S34-RS04		Local	24.0	0.118	320	\$20,904	5	8	2.8568
C57-T083R08S27-RS03	E48	Local	24.0	0.200	370	\$35,430	5	8	3.3033
C57-T083R06S29-RS10		Local	18.0	0.076	200	\$14,200	4	8	2.1111
C57-T083R08S18-RS03	E44	FM	22.0	1.069	240	\$199,734	4	8	2.5333
C57-T086R06S03-RS08		FM	26.0	0.423	260	\$74,935	5	8	2.1478
C57-T086R07S03-RS04		Local	24.0	0.168	380	\$29,761	5	8	3.3926
C57-T084R08S20-RS06		Local	24.0	0.066	340	\$11,692	5	8	3.0356
C57-T083R08S16-RS05	E44	FM	22.0	0.497	290	\$109,241	4	8	3.2762
C57-T083R06S29-RS25		Local	18.0	0.073	200	\$13,639	4	8	2.1111
C57-T084R08S36-RS29	E36	FM-FAS+	24.0	0.199	10000	\$252,318	10	14	2.3044
C57-T085R05S07-RS03		FM-FAS	18.0	0.373	200	\$69,692	4	8	2.1111
C57-T085R05S08-RS04		FM-FAS	20.0	0.901	200	\$168,345	4	8	2.1111
C57-T086R06S03-RS04		FM	26.0	0.199	260	\$35,253	5	8	2.1478
C57-T086R07S06-RS05		FM	22.0	0.242	190	\$45,216	4	8	2.0056
C57-T085R07S26-RS11		Local	24.0	0.062	250	\$10,983	5	8	2.0654
C57-T083R06S31-RS02		Local	24.0	0.329	410	\$58,282	5	8	3.8237
C57-T082R06S21-RS05	W8E	FM	24.0	0.789	290	\$139,772	5	8	2.5891
C57-T084R08S20-RS04		Local	24.0	0.199	340	\$35,253	5	8	3.0355
C57-T083R06S03-RS03		Local	24.0	0.031	320	\$5,492	5	8	2.8571
C57-T086R07S05-RS01		FM	22.0	0.522	190	\$97,532	4	8	2.0056
C57-T086R06S20-RS08		FM	22.0	0.062	210	\$11,584	4	8	2.2165
C57-T085R07S28-RS05	E28	FM	24.0	0.080	300	\$14,172	5	8	2.6784
C57-T084R08S05-RS03		Local	24.0	0.572	400	\$101,330	5	8	3.7304
C57-T083R06S29-RS08		Local	18.0	0.050	330	\$9,342	4	8	3.7278
C57-T084R08S20-RS08		Local	24.0	0.215	340	\$38,087	5	8	3.0354
C57-T084R06S30-RS12		Local	22.0	0.373	300	\$69,692	4	8	3.3892
C57-T084R07S08-RS10		Local	24.0	0.329	260	\$58,282	5	8	2.1478
C57-T086R07S13-RS06		Local	22.0	0.180	210	\$33,632	4	8	2.2167
C57-T082R08S02-RS18		FM-FAS	22.0	0.232	220	\$43,347	4	8	2.3223
C57-T083R08S16-RS03	E44	FM	22.0	0.510	260	\$95,290	4	8	2.7444
C57-T083R08S10-RS06		Local	22.0	0.168	230	\$31,390	4	8	2.4278
C57-T083R06S20-RS08		Local	24.0	0.914	270	\$161,915	5	8	2.4105
C57-T083R06S07-RS04		FM-FAS+	24.0	0.131	13100	\$166,099	10	14	3.0188
C57-T083R06S03-RS05		Local	24.0	0.472	320	\$83,615	5	8	2.8569
C57-T083R06S30-RS02		FM-FAS	24.0	0.497	410	\$88,044	5	8	3.8237
C57-T084R06S19-RS10		Local	22.0	0.087	300	\$16,255	4	8	3.3890
C57-T084R08S11-RS04		Local	24.0	0.752	260	\$133,217	5	8	2.1478
C57-T085R07S26-RS09		Local	24.0	0.640	250	\$113,376	5	8	2.0652
C57-T084R06S18-RS06		Local	24.0	0.758	300	\$134,280	5	8	2.6784
C57-T084R08S23-RS01		Local	22.0	0.249	270	\$46,524	4	8	3.0502
C57-T084R08S20-RS10		Local	24.0	0.341	340	\$60,408	5	8	3.0355
C57-T084R06S30-RS14		Local	22.0	0.118	300	\$22,047	4	8	3.3892
C57-T083R08S27-RS05	E48	Local	24.0	0.311	370	\$55,094	5	8	3.3033
C57-T082R05S08-RS09		Local	16.0	0.311	310	\$58,108	4	8	3.5022
C57-T083R06S30-RS06		Local	24.0	0.211	410	\$37,379	5	8	3.8237
C57-T084R08S18-RS07		Local	24.0	0.851	280	\$150,755	5	8	2.4998
C57-T086R06S19-RS05		Local	14.0	0.050	25	\$6,295	1	5	2.0244
C57-T084R07S08-RS08		Local	22.0	0.211	230	\$39,424	4	8	2.4277
C57-T082R05S08-RS08		Local	22.0	0.528	190	\$98,653	4	8	2.0056

Table 13c : Printout of road segments that warrent Upgrade

C57-T082R06S22-RS07	W8E	FM	24.0	0.292	290	\$51,728	5	8	2.5891
C57-T084R06S19-RS12		Local	22.0	0.173	300	\$32,324	4	8	3.3892
C57-T083R08S01-RS53		Local	22.0	0.081	2000	\$46,476	7	11	2.5623
C57-T084R06S33-RS07		Local	24.0	0.261	280	\$46,236	5	8	2.4998
C57-T083R06S03-RS07		Local	24.0	0.199	320	\$35,253	5	8	2.8569
C57-T083R06S30-RS04		Local	24.0	0.071	410	\$12,578	5	8	3.8236
C57-T083R06S31-RS05		Local	24.0	0.622	270	\$110,188	5	8	2.4105
C57-T084R06S19-RS08		Local	22.0	0.425	300	\$79,408	4	8	3.3892
C57-T082R08S08-RS05		FM	24.0	0.758	400	\$134,280	5	8	3.7304
C57-T083R08S17-RS05	E44	FM	22.0	0.510	260	\$95,290	4	8	2.7444
C57-T085R05S19-RS01	E28	FM-FAS	26.0	0.721	300	\$127,725	5	8	2.6784
C57-T082R08S07-RS05		FM	24.0	0.280	300	\$49,602	5	8	2.6784
C57-T086R07S05-RS03		FM	22.0	0.118	190	\$22,047	4	8	2.0055
C57-T085R05S08-RS06	E28	FM-FAS	20.0	0.111	240	\$20,739	4	8	2.5334
C57-T083R08S27-RS01	E48	Local	24.0	0.497	370	\$88,044	5	8	3.3033
C57-T083R08S01-RS03	E36	FM-FAS+	34.0	0.068	10000	\$86,219	10	14	2.3044
C57-T083R08S21-RS04		Local	24.0	0.044	30	\$5,540	1	5	2.4316
C57-T082R08S08-RS03		FM	24.0	0.249	300	\$44,110	5	8	2.6784
C57-T082R06S21-RS03	W8E	FM	24.0	0.230	310	\$40,745	5	8	2.7676
C57-T083R08S22-RS04		Local	22.0	0.758	280	\$186,146	4	8	3.1632
C57-T083R08S12-RS05		FM-FAS	22.0	0.149	3410	\$122,537	7	12	3.2633
C57-T083R06S18-RS02		FM-FAS+	24.0	0.112	10200	\$142,008	10	14	2.3505
C57-T083R06S07-RS06		FM-FAS+	24.0	0.081	13100	\$102,702	10	14	3.0188
C57-T083R08S17-RS03	E44	FM	22.0	0.497	240	\$92,861	4	8	2.5333
C57-T082R08S27-RS04	W42	FM-FAS	24.0	1.001	300	\$177,327	5	8	2.6783
C57-T082R08S07-RS03		FM	24.0	0.727	300	\$128,788	5	8	2.6783
C57-T083R08S01-RS35		Local	22.0	0.031	2000	\$17,787	7	11	2.5623
C57-T082R06S17-RS07	W8E	FM	24.0	0.907	350	\$160,675	5	8	3.1247
C57-T085R06S01-RS04	E28	FM	24.0	0.541	310	\$116,853	5	8	2.7676
C57-T083R07S06-RS03	E36	FM-FAS+	24.0	0.087	10000	\$110,310	10	14	2.3044
C57-T083R07S13-RS14		FM-FAS+	24.0	0.410	10200	\$519,852	10	14	2.3505
C57-T083R08S12-RS07		FM-FAS	22.0	0.112	3410	\$92,109	7	12	3.2633
Totals				34.288		\$7,973,544			

58 Louisa

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C58-T074R03S35-RS04		FM	24.0	0.690	310	\$122,234	5	8	2.7676
C58-T073R03S02-RS06		FM	24.0	0.497	310	\$88,044	5	8	2.7677
C58-T074R02S29-RS10	X61	FM-FAS	30.0	0.114	360	\$18,267	6	8	2.3507
C58-T075R05S06-RS03	G36	FM-FAS	20.0	0.050	380	\$8,012	6	8	2.4813
C58-T073R03S30-RS03		Local	20.0	0.559	150	\$115,871	3	8	2.8526
C58-T075R04S18-RS04		FM	22.0	0.491	210	\$91,740	4	8	2.2167
C58-T075R03S26-RS03		Local	26.0	1.019	430	\$180,516	5	8	4.0102
Totals				3.420		\$624,683			

59 Lucas

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C59-T072R21S29-RS12	H40	FM-FAS	22.0	0.131	330	\$24,476	4	8	3.7281
C59-T072R20S31-RS02	S50	FM-FAS	26.0	1.001	340	\$177,327	5	8	3.0355
C59-T072R21S22-RS05		FM	26.0	0.609	320	\$167,227	6	8	2.0895
C59-T072R22S26-RS02	S23	FM-FAS	26.0	0.497	360	\$88,044	5	8	3.2140
C59-T072R21S33-RS04	H40	FM-FAS	22.0	0.249	330	\$46,524	4	8	3.7281
C59-T072R21S29-RS06		Local	22.0	0.031	220	\$5,792	4	8	2.3219
C59-T072R21S29-RS10	H40	FM-FAS	22.0	0.050	330	\$9,342	4	8	3.7278
C59-T071R20S06-RS02	S50	FM-FAS	26.0	0.392	260	\$69,443	5	8	2.1478
C59-T072R21S27-RS01		FM	28.0	0.423	320	\$67,779	6	8	2.0895
C59-T073R21S34-RS03		FM	20.0	0.118	200	\$22,047	4	8	2.1111
C59-T072R21S20-RS07		FM	28.0	0.249	320	\$39,898	6	8	2.0895
C59-T072R21S29-RS08	H40	FM-FAS	22.0	0.099	230	\$18,497	4	8	2.4278
C59-T072R21S32-RS04	H40	FM-FAS	22.0	0.938	330	\$175,258	4	8	3.7281
C59-T073R22S21-RS06		Local	24.0	0.317	300	\$56,157	5	8	2.6784
C59-T071R21S04-RS01	H40	FM-FAS	22.0	0.932	330	\$174,137	4	8	3.7281
C59-T072R21S28-RS03		FM	28.0	0.603	320	\$96,621	6	8	2.0895
C59-T072R21S27-RS03		FM	28.0	0.037	320	\$5,929	6	8	2.0897
C59-T073R21S35-RS01	H20	FM	22.0	0.249	200	\$46,524	4	8	2.1111
C59-T072R21S21-RS07		FM	28.0	0.472	320	\$75,630	6	8	2.0895
Totals				7.397		\$1,366,652			

60 Lyon

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C60-T098R46S24-RS08		Local	28.0	1.137	560	\$182,185	6	8	3.8255
C60-T100R48S12-RS02		Local	24.0	0.031	340	\$5,492	5	8	3.0354
Totals				1.168		\$187,677			

61 Madison

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C61-T077R28S18-RS03		Local	18.0	0.653	45	\$104,306	1	6	3.1796
C61-T074R26S35-RS05		FM-FAS	28.0	0.249	570	\$39,898	6	8	3.8938
C61-T075R28S01-RS10	P69	FM	24.0	0.528	390	\$93,535	5	8	3.4819
C61-T076R27S17-RS04		FM	22.0	0.497	330	\$88,044	5	8	2.9462
C61-T076R27S20-RS04		FM	22.0	0.522	330	\$92,472	5	8	2.9462
C61-T076R26S29-RS08	G6R	FM-FAS	22.0	0.168	240	\$57,850	4	8	2.5334
C61-T076R27S32-RS06	R21	FM	28.0	0.242	440	\$38,776	6	8	3.0058
C61-T074R26S22-RS06		Local	24.0	0.249	250	\$44,110	5	8	2.0652
C61-T077R29S06-RS10	P48	FM-FAS	22.0	0.162	250	\$28,698	5	8	2.0651
C61-T076R27S20-RS05		FM	22.0	0.081	320	\$14,349	5	8	2.8570
C61-T077R28S04-RS04		FM-FAS	26.0	0.497	810	\$301,471	5	11	2.3123
C61-T076R27S36-RS07		Local	18.0	0.292	70	\$67,738	1	8	3.7555
C61-T076R28S35-RS01		FM	30.0	0.497	370	\$79,636	6	8	2.4160
C61-T076R27S32-RS08		Local	22.0	0.068	240	\$12,705	4	8	2.5334
C61-T077R26S05-RS04		Local	28.0	0.578	350	\$92,615	6	8	2.2854
C61-T075R28S01-RS06	P69	FM	24.0	0.031	390	\$5,492	5	8	3.4820
C61-T076R27S20-RS03		FM	22.0	0.099	320	\$17,538	5	8	2.8569

Table 13c : Printout of road segments that warrent Upgrade

C61-T074R26S27-RS02		Local	24.0	0.497	250	\$88,044	5	8	2.0652
C61-T077R28S04-RS06		FM-FAS	24.0	0.497	770	\$329,821	5	11	2.1981
C61-T075R28S12-RS03	P69	FM	24.0	0.920	390	\$222,678	5	8	3.4819
C61-T076R28S24-RS07	G31	FM-FAS	30.0	0.628	310	\$100,627	6	8	2.0242
C61-T075R27S08-RS04		Local	22.0	0.280	240	\$200,156	4	8	2.5333
C61-T074R29S27-RS02	P53	FM-FAS	22.0	0.752	200	\$140,505	4	8	2.1111
C61-T075R28S01-RS08	P69	FM	24.0	0.031	390	\$5,492	5	8	3.4820
C61-T075R27S05-RS04		Local	22.0	1.001	240	\$187,029	4	8	2.5333
C61-T074R26S36-RS01		FM-FAS	28.0	0.249	570	\$39,898	6	8	3.8938
C61-T076R28S35-RS03		FM	26.0	0.218	510	\$38,619	5	8	4.7563
C61-T074R26S22-RS04		Local	24.0	0.143	250	\$25,332	5	8	2.0653
C61-T076R27S20-RS07		FM	22.0	0.087	320	\$111,787	5	8	2.8570
C61-T077R28S09-RS04		FM-FAS	26.0	0.497	770	\$301,471	5	11	2.1981
C61-T076R27S35-RS05		Local	18.0	0.802	70	\$186,048	1	8	3.7552
C61-T074R26S22-RS02	G70	FM-FAS	28.0	0.590	360	\$94,538	6	8	2.3507
Totals				12.605		\$3,251,279			

62 Mahaska

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C62-T075R15S17-RS12		Local	22.0	0.081	210	\$15,134	4	8	2.2168

Table 13c : Printout of road segments that warrent Upgrade

C62-T075R15S08-RS03		Local	24.0	0.680	490	\$143,412	5	8	4.5698
C62-T074R14S13-RS11	G65	FM-FAS	26.0	0.143	290	\$25,332	5	8	2.5892
C62-T076R17S06-RS02		Local	26.0	0.783	270	\$138,709	5	8	2.4105
C62-T075R15S17-RS10		Local	22.0	0.068	210	\$12,705	4	8	2.2166
C62-T075R15S17-RS14		Local	22.0	0.062	210	\$11,584	4	8	2.2165
C62-T076R17S19-RS04		Local	20.0	0.019	230	\$3,550	4	8	2.4277
C62-T075R15S17-RS08		Local	22.0	0.099	210	\$18,497	4	8	2.2166
C62-T076R17S35-RS18	G39	FM-FAS	23.0	0.081	250	\$69,569	4	8	2.6388
C62-T077R16S05-RS03	G13	FM	26.0	0.249	290	\$44,110	5	8	2.5891
C62-T076R15S03-RS04		Local	20.0	0.037	190	\$6,913	4	8	2.0056
C62-T075R15S17-RS06		Local	22.0	0.193	210	\$36,061	4	8	2.2166
C62-T074R14S13-RS09	G65	FM-FAS	26.0	0.497	290	\$88,044	5	8	2.5891
C62-T074R14S13-RS07	G65	FM-FAS	26.0	0.062	290	\$10,983	5	8	2.5892
C62-T075R16S26-RS04		FM	28.0	0.218	320	\$34,931	6	8	2.0895
C62-T075R14S02-RS08		Local	22.0	0.292	230	\$60,527	3	8	4.7191
C62-T074R14S11-RS08		Local	24.0	0.410	330	\$72,632	5	8	2.9462
C62-T077R17S31-RS02		Local	22.0	1.001	190	\$187,029	4	8	2.0055
Totals				4.975		\$979,723			

63 Marion

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C63-T076R18S33-RS08		FM	26.0	0.833	1360	\$997,875	5	11	4.4652
C63-T074R20S03-RS01	G62	FM-FAS	26.0	0.740	270	\$131,091	5	8	2.4105
C63-T074R20S04-RS01	G62	FM-FAS	26.0	0.242	270	\$42,870	5	8	2.4105
C63-T074R20S05-RS01	G62	FM-FAS	26.0	1.001	270	\$177,327	5	8	2.4105
C63-T074R20S05-RS04	G62	FM-FAS	26.0	0.099	270	\$17,538	5	8	2.4104
C63-T074R21S03-RS04	G62	FM	22.0	0.500	190	\$93,421	4	8	2.0056
C63-T076R18S20-RS07		FM	26.0	0.578	260	\$102,393	5	8	2.1478
C63-T074R20S03-RS03	G62	FM-FAS	26.0	0.261	270	\$46,236	5	8	2.4106
C63-T074R20S04-RS03	G62	FM-FAS	26.0	0.758	270	\$134,280	5	8	2.4105
C63-T075R18S04-RS08		FM	34.0	0.249	1360	\$146,826	6	11	3.1200
C63-T075R18S04-RS03		FM	22.0	0.485	630	\$298,892	4	11	2.3591
C63-T076R18S35-RS04		Local	22.0	0.230	240	\$42,974	4	8	2.5333
C63-T076R20S33-RS06	S45	FM	26.0	0.249	250	\$44,110	5	8	2.0652
C63-T076R18S29-RS05		FM	26.0	0.547	260	\$96,901	5	8	2.1478
C63-T075R19S15-RS04		Local	22.0	0.394	230	\$73,616	4	8	2.4278
C63-T075R19S15-RS03		Local	22.0	0.497	200	\$92,861	4	8	2.1111
C63-T076R18S34-RS03		FM	26.0	0.036	1130	\$21,837	5	11	3.4812
C63-T075R20S04-RS02	S45	FM	26.0	0.342	250	\$88,980	5	8	2.0652
C63-T076R18S33-RS05		FM	26.0	0.037	1130	\$80,921	5	11	3.4814
C63-T075R20S14-RS04		FM	22.0	0.472	260	\$88,190	4	8	2.7445
C63-T076R18S04-RS04	G18	FM-FAS	22.0	0.099	200	\$18,497	4	8	2.1111
C63-T076R18S01-RS02		FM	22.0	0.497	280	\$92,861	4	8	3.1632
C63-T075R19S09-RS03		Local	24.0	0.062	1760	\$35,574	7	11	2.0945
C63-T076R18S25-RS04	G39	FM	22.0	0.249	200	\$46,524	4	8	2.1111
C63-T076R18S22-RS03		FM	22.0	0.249	280	\$46,524	4	8	3.1632
C63-T075R19S10-RS06		Local	22.0	0.920	230	\$202,345	4	8	2.4278
C63-T076R18S33-RS07		FM	26.0	0.073	1130	\$44,280	5	11	3.4813
C63-T076R19S02-RS23		Local	22.0	0.068	210	\$12,705	4	8	2.2166
C63-T076R18S24-RS06		Local	22.0	0.342	230	\$63,900	4	8	2.4278
C63-T077R18S36-RS02		FM	22.0	1.001	220	\$187,029	4	8	2.3222
C63-T076R18S28-RS04		FM	26.0	0.702	260	\$124,360	5	8	2.1478
C63-T076R18S04-RS06	G18	FM-FAS	22.0	0.099	200	\$18,497	4	8	2.1111
C63-T076R19S25-RS06		Local	26.0	0.012	300	\$2,126	5	8	2.6784
C63-T076R18S34-RS10		Local	22.0	0.547	240	\$102,203	4	8	2.5333
C63-T076R19S32-RS06		FM	22.0	0.080	280	\$14,172	5	8	2.4998
C63-T076R19S31-RS06		Local	22.0	0.547	250	\$102,203	4	8	2.6389
C63-T075R18S04-RS10		FM	34.0	0.671	430	\$107,517	6	8	2.9375
C63-T075R19S13-RS03		Local	22.0	0.050	360	\$9,342	4	8	4.0670
C63-T076R19S33-RS02		FM	22.0	0.511	280	\$90,524	5	8	2.4998
C63-T077R19S28-RS07		Local	22.0	0.199	230	\$37,182	4	8	2.4278
C63-T075R19S15-RS05		Local	20.0	0.497	200	\$92,861	4	8	2.1111
C63-T075R19S17-RS05		Local	18.0	0.510	200	\$95,290	4	8	2.1111
C63-T076R18S25-RS05	G39	FM	22.0	0.112	200	\$20,926	4	8	2.1111
C63-T075R21S15-RS03		Local	22.0	0.510	190	\$95,290	4	8	2.0055
C63-T075R20S22-RS03		FM	22.0	0.218	260	\$40,732	4	8	2.7444
C63-T075R18S09-RS03		FM	34.0	0.149	430	\$23,875	6	8	2.9375
C63-T076R18S23-RS01		FM	22.0	1.001	280	\$187,029	4	8	3.1632
C63-T074R20S02-RS01	G62	FM-FAS	26.0	0.379	270	\$67,140	5	8	2.4105
C63-T076R18S01-RS04		FM-FAS	22.0	0.398	280	\$74,363	4	8	3.1632
C63-T075R19S15-RS06		Local	22.0	0.089	230	\$16,629	4	8	2.4279
C63-T076R19S02-RS10		Local	22.0	0.099	210	\$18,497	4	8	2.2166
C63-T076R18S33-RS06		FM	26.0	0.218	260	\$38,619	5	8	2.1478
C63-T077R18S22-RS01		FM	22.0	0.398	200	\$74,363	4	8	2.1111
C63-T074R20S05-RS02	G62	FM-FAS	26.0	0.907	270	\$160,675	5	8	2.4105
C63-T075R18S04-RS12		FM	34.0	0.342	430	\$54,800	6	8	2.9375
C63-T076R18S04-RS02	G18	FM	22.0	0.268	200	\$50,074	4	8	2.1111
C63-T077R19S28-RS04		Local	22.0	0.448	230	\$83,705	4	8	2.4278
C63-T075R21S16-RS05		Local	22.0	0.497	190	\$92,861	4	8	2.0056
C63-T075R19S14-RS05		Local	22.0	1.262	200	\$288,670	4	8	2.1111
C63-T075R19S06-RS02		Local	22.0	0.193	250	\$36,061	4	8	2.6388
C63-T077R18S33-RS04	G18	FM	22.0	0.510	200	\$95,290	4	8	2.1111
C63-T075R19S13-RS04		Local	22.0	0.249	200	\$46,524	4	8	2.1111
C63-T077R18S21-RS07		FM	22.0	0.019	200	\$3,550	4	8	2.1111
C63-T076R18S36-RS03	G39	FM	22.0	0.211	200	\$39,424	4	8	2.1111
C63-T076R18S33-RS03		FM	26.0	0.423	1130	\$310,584	5	11	3.4813
C63-T076R18S24-RS04	G39	FM	22.0	1.032	200	\$192,821	4	8	2.1111
C63-T076R18S25-RS06	G39	FM	22.0	0.870	200	\$162,553	4	8	2.1111
C63-T076R18S34-RS05		FM	26.0	0.783	1130	\$474,953	5	11	3.4813
C63-T075R19S09-RS05		Local	24.0	0.249	1760	\$142,871	7	11	2.0945
Totals				28.369		\$7,258,532			

64 Marshall

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C64-T083R17S15-RS02	T31	FM	22.0	0.161	430	\$25,798	6	8	2.9375
C64-T084R17S19-RS02		Local	20.0	0.522	250	\$97,532	4	8	2.6389
C64-T083R20S15-RS04		Local	22.0	1.001	250	\$187,029	4	8	2.6389
C64-T083R17S17-RS04		FM	22.0	0.081	210	\$15,134	4	8	2.2168
C64-T083R20S09-RS03		Local	22.0	0.050	200	\$9,342	4	8	2.1111
C64-T083R18S24-RS03		Local	20.0	0.690	1010	\$425,228	4	11	4.0755
C64-T084R18S08-RS04		Local	22.0	1.212	280	\$226,453	4	8	3.1632
C64-T083R17S29-RS02		FM	22.0	0.740	210	\$138,263	4	8	2.2167
C64-T083R17S17-RS02		FM	22.0	0.901	210	\$168,345	4	8	2.2167
C64-T082R17S05-RS04		FM	24.0	0.522	530	\$92,472	5	8	4.9428
C64-T083R18S17-RS12		Local	26.0	0.156	250	\$27,635	5	8	2.0652
C64-T083R17S32-RS04		FM	22.0	0.497	210	\$174,086	4	8	2.2167
C64-T084R18S17-RS03		Local	22.0	0.771	280	\$144,055	4	8	3.1632
C64-T082R20S33-RS02		Local	22.0	0.249	190	\$46,524	4	8	2.0055
C64-T082R20S32-RS05		Local	22.0	0.105	190	\$19,618	4	8	2.0056
C64-T083R18S09-RS16		Local	18.0	0.112	270	\$20,926	4	8	3.0504
C64-T083R17S20-RS02		FM	22.0	0.988	210	\$184,600	4	8	2.2167
C64-T082R18S07-RS03		Local	22.0	1.013	300	\$189,271	4	8	3.3891
C64-T082R19S09-RS02		Local	26.0	1.013	360	\$179,453	5	8	3.2140
C64-T084R17S28-RS06		Local	20.0	0.398	230	\$74,363	4	8	2.4278
C64-T083R20S22-RS04		Local	22.0	0.491	250	\$91,740	4	8	2.6389
C64-T084R18S07-RS07		Local	22.0	0.497	280	\$92,861	4	8	3.1632
C64-T083R17S29-RS04		FM	22.0	0.249	210	\$46,524	4	8	2.2167
C64-T082R17S03-RS02	T31	FM	22.0	1.013	210	\$189,271	4	8	2.2167

Table 13c : Printout of road segments that warrent Upgrade

C64-T083R17S32-RS02	FM	22.0	0.497	210	\$92,861	4	8	2.2167
	Totals		13.929		\$2,959,385			

Table 13c : Printout of road segments that warrant Upgrade

65 Mills

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C65-T072R43S14-RS06	L45	Local	22.0	0.099	710	\$61,011	4	11	2.6587
C65-T073R43S26-RS07		FM	22.0	0.740	190	\$138,263	4	8	2.0056
C65-T073R43S08-RS03	L31	Local	24.0	0.112	800	\$69,023	4	11	2.9957
C65-T072R43S09-RS18		Local	24.0	0.062	310	\$10,983	5	8	2.7675
C65-T072R42S20-RS04		FM	24.0	0.677	270	\$119,931	5	8	2.4105
C65-T073R42S08-RS41	L45	Local	22.0	0.193	200	\$36,061	4	8	2.1111
C65-T072R42S18-RS08		FM	24.0	0.659	320	\$105,594	6	8	2.0895
C65-T073R43S33-RS10		Local	22.0	1.019	210	\$190,392	4	8	2.2167
C65-T072R43S14-RS04	L45	Local	22.0	0.292	390	\$54,558	4	8	4.4059
C65-T073R43S28-RS05	H16	FM	22.0	1.046	420	\$195,437	4	8	4.9501
C65-T072R43S36-RS03		Local	20.0	0.522	200	\$97,532	4	8	2.1111
C65-T073R43S25-RS05		Local	22.0	0.131	210	\$24,476	4	8	2.2166
C65-T071R43S12-RS09	L45	FM-FAS	22.0	0.342	190	\$63,900	4	8	2.0056
C65-T073R42S08-RS43		Local	22.0	0.249	200	\$46,524	4	8	2.1111
C65-T072R43S09-RS14		Local	16.0	0.267	210	\$49,887	4	8	2.2167
C65-T072R43S04-RS04		Local	18.0	0.988	210	\$184,600	4	8	2.2167
C65-T072R42S18-RS06		FM	24.0	0.118	320	\$18,908	6	8	2.0894
C65-T072R43S23-RS03		Local	22.0	0.131	710	\$80,732	4	11	2.6587
C65-T073R43S05-RS04	L31	Local	24.0	0.054	800	\$59,829	4	11	2.9957
C65-T072R42S19-RS06		FM	24.0	0.348	270	\$61,648	5	8	2.4105
C65-T072R42S29-RS04		FM	20.0	1.013	250	\$189,271	4	8	2.6389
C65-T073R43S36-RS01		Local	22.0	0.603	210	\$112,666	4	8	2.2167
C65-T073R43S26-RS03		FM	22.0	0.199	300	\$37,182	4	8	3.3891
C65-T072R43S09-RS16		Local	16.0	0.653	310	\$274,888	4	8	3.5021
C65-T073R43S28-RS09	H16	FM	22.0	0.267	360	\$49,887	4	8	4.0670
C65-T072R43S32-RS04	L31	FM	24.0	1.014	310	\$282,608	4	8	3.5021
C65-T073R43S28-RS07	H16	FM	22.0	0.035	390	\$6,539	4	8	4.4057
		Totals		11.833		\$2,622,329			

66 Mitchell

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C66-T100R18S14-RS07		FM	20.0	0.050	190	\$9,342	4	8	2.0058
C66-T100R18S14-RS05		FM	20.0	0.050	190	\$9,342	4	8	2.0058
C66-T100R18S07-RS05	S68	FM	26.0	0.087	270	\$15,412	5	8	2.4106
C66-T099R18S07-RS06		Local	20.0	0.280	230	\$52,316	4	8	2.4278
		Totals		0.467		\$86,412			

67 Monona

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C67-T083R44S34-RS03		Local	18.0	0.180	40	\$28,752	1	6	2.8262
C67-T082R42S33-RS03		Local	22.0	0.062	25	\$7,806	1	5	2.0264
C67-T083R46S03-RS06		FM	22.0	0.522	380	\$97,532	4	8	4.2929
		Totals		0.764		\$134,090			

68 Monroe

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C68-T071R17S34-RS06	T55	FM	24.0	0.068	310	\$12,046	5	8	2.7676
C68-T073R16S01-RS08	H16	FM	30.0	0.314	400	\$50,313	6	8	2.7325
C68-T072R16S04-RS31	H27	FM-FAS	26.0	0.858	250	\$151,995	5	8	2.0652
C68-T072R16S04-RS29	H27	FM-FAS	26.0	0.162	300	\$28,698	5	8	2.6784
C68-T072R17S21-RS13		Local	18.0	0.081	710	\$49,918	4	11	2.6587
C68-T072R16S03-RS03	H27	FM-FAS	24.0	0.758	250	\$134,280	5	8	2.0652
		Totals		2.241		\$427,251			

69 Montgomery

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C69-T072R38S27-RS04	M55	FM	20.0	0.019	190	\$3,550	4	8	2.0061
C69-T072R38S29-RS04		FM	22.0	0.149	280	\$27,839	4	8	3.1633
C69-T072R38S29-RS06		FM	22.0	0.348	200	\$65,021	4	8	2.1111
C69-T073R38S26-RS03	M55	FM-FAS	26.0	1.001	1300	\$607,188	5	11	4.0050
C69-T072R38S27-RS06	M55	FM	20.0	0.143	190	\$26,718	4	8	2.0055
C69-T072R38S26-RS04	M55	FM	22.0	0.087	190	\$16,255	4	8	2.0054
C69-T072R38S26-RS06	M55	FM	20.0	0.218	190	\$40,732	4	8	2.0055
C69-T073R36S33-RS03	H24	FM-FAS	26.0	0.659	250	\$218,892	5	8	2.0652
		Totals		2.624		\$1,006,196			

70 Muscatine

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C70-T078R04S01-RS04		FM	22.0	0.050	210	\$9,342	4	8	2.2164
C70-T077RE1S23-RS08		Local	12.0	0.081	270	\$15,134	4	8	3.0504
C70-T077RE1S12-RS10		Local	24.0	0.162	500	\$28,698	5	8	4.6630
C70-T077R03S01-RS04		Local	22.0	0.193	60	\$44,772	1	8	3.2190
C70-T076R02S15-RS03		Local	22.0	0.131	270	\$24,476	4	8	3.0502
C70-T076R02S16-RS03		Local	22.0	0.578	270	\$107,995	4	8	3.0502
C70-T076R04S36-RS06	G34	FM	22.0	0.261	190	\$48,766	4	8	2.0055
C70-T078RE1S05-RS02		Local	24.0	1.001	290	\$177,327	5	8	2.5891
C70-T077R01S25-RS18		Local	18.0	0.076	350	\$14,200	4	8	3.9540
C70-T077R01S25-RS17		Local	18.0	0.086	350	\$16,068	4	8	3.9538
C70-T077R01S13-RS06	Y26	FM	24.0	0.068	300	\$12,046	5	8	2.6784
		Totals		2.687		\$498,826			

71 O'Brien

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C71-T096R41S02-RS03		FM	22.0	0.510	320	\$95,290	4	8	3.6151
C71-T094R39S08-RS09		FM	26.0	0.392	300	\$69,443	5	8	2.6784
C71-T096R41S02-RS01		FM	22.0	0.491	320	\$91,740	4	8	3.6151
C71-T097R39S29-RS06		Local	24.0	0.858	860	\$520,447	5	11	2.4550
		Totals		2.251		\$776,919			

72 Osceola

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C72-T098R39S08-RS19		Local	18.0	0.068	240	\$12,705	4	8	2.5334
		Totals		0.068		\$12,705			

73 Page

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C73-T069R39S29-RS03		Local	24.0	0.249	290	\$44,110	5	8	2.5891
C73-T069R36S33-RS13	J35	FM	22.0	0.218	220	\$40,732	4	8	2.3222
		Totals		0.467		\$84,842			

74 Palo Alto

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C74-T097R33S01-RS01		Local	24.0	1.001	420	\$177,327	5	8	3.9169
C74-T096R33S12-RS02		Local	22.0	1.001	200	\$187,029	4	8	2.1111
C74-T096R34S06-RS05		Local	22.0	0.144	300	\$26,905	4	8	3.3892
C74-T097R33S16-RS03		FM	22.0	0.261	190	\$48,766	4	8	2.0055

Table 13c : Printout of road segments that warrant Upgrade

C74-T097R32S06-RS01	Local	12.0	0.497	25	\$62,572	1	5	2.0255
Totals			2.904		\$502,600			

75 Plymouth

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C75-T093R48S04-RS03		Local	20.0	0.342	25	\$43,058	1	5	2.0257
C75-T092R45S19-RS03		Local	22.0	0.690	230	\$202,961	4	8	2.4278
C75-T093R44S28-RS02	K64	FM-FAS	24.0	1.013	540	\$162,316	6	8	3.6889
C75-T093R44S33-RS02	K64	FM-FAS	24.0	1.001	540	\$160,394	6	8	3.6889
C75-T093R44S21-RS02	K64	FM-FAS	24.0	1.013	540	\$162,316	6	8	3.6889
C75-T092R45S19-RS05		Local	22.0	0.249	230	\$46,524	4	8	2.4278
C75-T092R45S20-RS03		Local	22.0	0.099	270	\$18,497	4	8	3.0501
C75-T090R47S30-RS04		FM	22.0	1.013	300	\$189,271	4	8	3.3891
C75-T090R47S19-RS03		FM	22.0	0.988	300	\$184,600	4	8	3.3892
C75-T090R47S31-RS02		FM	22.0	0.479	300	\$89,497	4	8	3.3891
C75-T091R47S34-RS03		Local	24.0	0.037	860	\$22,444	5	11	2.4550
C75-T093R46S01-RS01		Local	24.0	1.001	350	\$177,327	5	8	3.1248
C75-T090R47S27-RS08		Local	22.0	0.193	340	\$36,061	4	8	3.8410
Totals				8.118		\$1,495,267			

76 Pocahontas

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C76-T093R34S28-RS07		Local	20.0	0.379	780	\$233,568	4	11	2.9208
C76-T093R34S28-RS03		Local	26.0	0.609	400	\$107,885	5	8	3.7304
C76-T092R32S01-RS01		Local	26.0	0.031	330	\$5,492	5	8	2.9462
Totals				1.019		\$346,944			

77 Polk

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C77-T079R24S18-RS23		Local	22.0	0.149	390	\$27,839	4	8	4.4059
C77-T079R24S05-RS07	R6F	FM-FAS+	24.0	0.242	12000	\$306,839	10	14	2.7653
C77-T079R24S04-RS15	R6F	FM-FAS+	24.0	0.087	12000	\$110,310	10	14	2.7653
C77-T079R24S17-RS08		FM-FAS+	24.0	0.087	10200	\$110,310	10	14	2.3505
C77-T079R24S24-RS03	F52	FM-FAS+	22.0	0.267	11000	\$338,537	10	14	2.5348
C77-T079R24S24-RS01	F52	FM-FAS+	62.0	0.099	11000	\$125,525	10	14	2.5348
C77-T079R24S04-RS17	R6F	FM-FAS+	24.0	0.149	12000	\$188,922	10	14	2.7653
C77-T079R24S06-RS03	R6F	FM-FAS+	22.0	0.099	14500	\$125,525	10	14	3.3414
C77-T079R24S05-RS03	R6F	FM-FAS+	22.0	0.348	14500	\$441,240	10	14	3.3414
C77-T079R24S17-RS10		FM-FAS+	22.0	0.031	10200	\$39,306	10	14	2.3505
C77-T079R24S05-RS05	R6F	FM-FAS+	24.0	0.298	14500	\$377,843	10	14	3.3414
C77-T080R24S15-RS01		FM-FAS	24.0	1.013	530	\$179,453	5	8	4.9428
C77-T079R24S17-RS12		FM-FAS+	24.0	0.050	12500	\$63,397	10	14	2.8805
C77-T079R24S17-RS06		FM-FAS+	31.0	0.081	10000	\$102,702	10	14	2.3044
C77-T079R24S20-RS02		FM-FAS+	24.0	0.050	12500	\$63,397	10	14	2.8805
Totals				3.050		\$2,601,146			

78 Pottawattamie

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C78-T074R43S05-RS06		FM-FAS+	22.0	0.143	2330	\$82,051	7	11	2.9851
C78-T074R43S09-RS09		Local	22.0	0.230	300	\$42,974	4	8	3.3892
C78-T076R44S27-RS06	L19	FM-FAS	35.0	0.702	440	\$112,484	6	8	3.0058
C78-T074R43S01-RS03	L43	FM	22.0	0.081	210	\$15,134	4	8	2.2168
C78-T074R43S09-RS12		Local	22.0	0.497	650	\$306,288	4	11	2.4340
C78-T074R40S23-RS02		FM-FAS	22.0	0.497	190	\$92,861	4	8	2.0056
C78-T077R44S33-RS02		Local	20.0	0.479	340	\$89,497	4	8	3.8411
C78-T075R44S07-RS04		Local	24.0	0.497	300	\$88,044	5	8	2.6784
C78-T075R44S11-RS10		Local	20.0	0.429	210	\$94,968	4	8	2.2167
C78-T075R44S01-RS04		FM	22.0	1.442	230	\$269,427	4	8	2.4278
C78-T075R44S11-RS03		Local	20.0	0.149	210	\$27,839	4	8	2.2167
C78-T077R41S30-RS09	L55	FM-FAS	34.0	0.392	310	\$62,811	6	8	2.0242
C78-T077R41S31-RS04	L55	FM-FAS	34.0	1.100	310	\$176,257	6	8	2.0242
C78-T074R40S11-RS04		FM-FAS	22.0	1.001	210	\$187,029	4	8	2.2167
C78-T077R44S25-RS06		Local	22.0	0.449	210	\$83,892	4	8	2.2167
C78-T075R43S04-RS06		Local	22.0	1.001	210	\$187,029	4	8	2.2167
C78-T077R44S28-RS04		Local	20.0	0.249	340	\$46,524	4	8	3.8411
C78-T077R41S30-RS07	L55	FM-FAS	34.0	0.267	490	\$42,782	6	8	3.3473
C78-T075R43S06-RS06		Local	18.0	0.522	200	\$97,532	4	8	2.1111
C78-T077R44S33-RS08	L19	Local	26.0	0.211	320	\$37,379	5	8	2.8569
C78-T077R43S09-RS03	L36	FM-FAS	22.0	0.081	190	\$15,134	4	8	2.0054
C78-T077R41S30-RS12	L55	FM-FAS	20.0	0.019	1120	\$11,709	4	11	4.5193
C78-T074R40S14-RS04		FM-FAS	22.0	1.249	190	\$233,366	4	8	2.0056
C78-T077R44S35-RS08		Local	22.0	0.100	210	\$18,684	4	8	2.2167
C78-T076R44S26-RS03		FM-FAS	44.0	0.690	440	\$133,871	6	8	3.0058
C78-T075R43S16-RS18		Local	20.0	0.180	260	\$33,632	4	8	2.7444
C78-T074R43S10-RS03		Local	22.0	0.398	300	\$74,363	4	8	3.3892
C78-T077R43S21-RS06	L36	FM-FAS	26.0	0.460	270	\$81,489	5	8	2.4105
C78-T077R41S30-RS11	L55	FM-FAS	34.0	0.348	310	\$55,761	6	8	2.0242
C78-T075R44S14-RS06	L19	FM-FAS	26.0	1.001	370	\$160,394	6	8	2.4160
C78-T076R44S13-RS07		Local	22.0	0.460	190	\$85,947	4	8	2.0056
C78-T076R44S13-RS05		FM	22.0	0.118	240	\$22,047	4	8	2.5334
C78-T074R43S12-RS02		Local	22.0	0.901	300	\$198,765	4	8	3.3892
C78-T075R43S09-RS02		Local	22.0	0.497	220	\$92,861	4	8	2.3222
C78-T074R43S05-RS07		FM-FAS+	22.0	0.292	2330	\$167,544	7	11	2.9851
C78-T077R43S21-RS08	L36	FM-FAS	26.0	0.447	310	\$79,186	5	8	2.7676
C78-T077R42S24-RS04	L55	FM-FAS	24.0	0.659	260	\$116,742	5	8	2.1478
C78-T076R43S36-RS10		Local	18.0	0.162	50	\$25,877	1	6	3.5321
C78-T077R44S26-RS06		Local	22.0	0.143	210	\$26,718	4	8	2.2167
C78-T075R44S02-RS12		Local	20.0	0.050	210	\$9,342	4	8	2.2164
C78-T075R44S02-RS14		Local	20.0	0.149	210	\$27,839	4	8	2.2167
C78-T075R44S11-RS08	L19	FM-FAS	32.0	0.603	370	\$96,621	6	8	2.4160
C78-T074R43S04-RS09		FM	22.0	0.103	1700	\$59,099	7	11	2.0231
C78-T077R44S33-RS03		Local	24.0	0.497	340	\$88,044	5	8	3.0355
C78-T074R43S02-RS06	L43	FM	22.0	0.783	210	\$146,298	4	8	2.2167
C78-T075R44S02-RS03		FM	22.0	0.050	230	\$9,342	4	8	2.4281
Totals				20.778		\$4,213,477			

79 Poweshiek

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C79-T078R15S12-RS04		FM	24.0	0.447	280	\$79,186	5	8	2.4998
C79-T078R15S13-RS01		FM	22.0	0.249	280	\$46,524	4	8	3.1632
C79-T078R15S04-RS01		FM	24.0	0.398	290	\$70,506	5	8	2.5891
C79-T078R15S14-RS05		FM	22.0	0.249	280	\$46,524	4	8	3.1632
C79-T078R15S14-RS03		Local	22.0	0.031	280	\$5,792	4	8	3.1630
C79-T078R15S05-RS09		Local	20.0	0.081	290	\$15,134	4	8	3.2762
C79-T081R13S34-RS03	F17	FM-FAS	20.0	0.267	190	\$49,887	4	8	2.0055
Totals				1.722		\$313,553			

80 Ringgold

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C80-T069R30S06-RS03		Local	16.0	0.317	900	\$195,359	4	11	3.6316
Totals				0.317		\$195,359			

Table 13c : Printout of road segments that warrent Upgrade

81 Sac

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C81-T086R35S11-RS06	D54	FM	22.0	0.037	240	\$6,913	4	8	2.5332
C81-T086R38S31-RS02		Local	28.0	0.118	530	\$18,908	6	8	3.6206
		Totals		0.155		\$25,821			

82 Scott

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C82-T078RE5S04-RS01		Local	26.0	0.155	370	\$27,458	5	8	3.3033
C82-T079RE4S25-RS01	F51	FM	26.0	0.497	250	\$88,044	5	8	2.0652
C82-T079RE5S22-RS08		Local	26.0	0.522	800	\$316,635	5	11	2.2838
C82-T079RE3S28-RS03		Local	28.0	0.541	440	\$86,686	6	8	3.0058
C82-T078RE2S32-RS02		Local	20.0	0.095	280	\$16,829	5	8	2.4998
C82-T079RE5S32-RS06		Local	26.0	0.510	370	\$90,347	5	8	3.3033
C82-T079RE5S27-RS04		Local	26.0	0.292	800	\$177,122	5	11	2.2838
C82-T078RE2S01-RS04		Local	28.0	1.001	580	\$160,394	6	8	3.9622
C82-T079RE4S25-RS03	F51	FM	26.0	0.199	250	\$35,253	5	8	2.0652
C82-T078RE5S05-RS03		Local	26.0	0.095	370	\$16,829	5	8	3.3034
		Totals		3.907		\$1,015,597			

83 Shelby

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C83-T080R39S34-RS02		FM	20.0	1.001	180	\$207,490	3	8	3.6933
C83-T080R38S22-RS09		Local	22.0	0.497	180	\$220,402	3	8	3.6933
C83-T079R39S10-RS02		FM	26.0	1.001	170	\$207,490	3	8	3.2329
C83-T079R37S03-RS02	M56	FM-FAS	30.0	0.951	170	\$197,126	3	8	3.2329
C83-T081R40S18-RS03	F16	FM	18.0	0.342	200	\$63,900	4	8	2.1111
C83-T080R39S33-RS03		FM	22.0	0.497	190	\$103,020	3	8	3.8985
C83-T080R39S21-RS22		Local	24.0	0.050	140	\$10,364	3	8	2.6624
C83-T078R39S02-RS12		Local	30.0	0.224	120	\$46,431	3	8	2.2820
C83-T080R39S21-RS20		Local	24.0	0.050	140	\$10,364	3	8	2.6624
C83-T080R40S22-RS03		Local	22.0	0.423	230	\$87,681	3	8	4.7192
C83-T079R38S32-RS03		Local	22.0	0.528	230	\$109,445	3	8	4.7193
C83-T078R40S32-RS01	F66	FM	26.0	0.988	130	\$204,795	3	8	2.4723
C83-T080R40S23-RS04		Local	22.0	0.050	230	\$10,364	3	8	4.7198
C83-T079R38S29-RS04		Local	26.0	0.590	230	\$122,297	3	8	4.7192
C83-T080R38S32-RS01	M36	FM-FAS	26.0	0.740	250	\$131,091	5	8	2.0652
C83-T079R38S08-RS06		FM	26.0	0.522	200	\$108,202	3	8	4.1037
C83-T080R38S27-RS04		Local	22.0	0.988	150	\$204,795	3	8	2.8526
C83-T080R38S33-RS03		Local	28.0	0.280	200	\$178,279	3	8	4.1037
C83-T079R38S08-RS02	M36	FM-FAS	30.0	0.097	180	\$20,106	3	8	3.6934
C83-T079R38S09-RS03		FM	26.0	0.112	180	\$23,216	3	8	3.6931
C83-T080R38S22-RS06		Local	34.0	0.752	150	\$155,877	3	8	2.8526
C83-T079R38S08-RS04		FM	26.0	0.211	200	\$43,737	3	8	4.1037
C83-T080R40S23-RS02		Local	22.0	0.145	230	\$30,056	3	8	4.7193
C83-T080R38S34-RS03		Local	28.0	0.721	200	\$149,451	3	8	4.1037
C83-T080R40S33-RS02		FM	24.0	1.001	160	\$207,490	3	8	3.0427
C83-T079R39S03-RS02		FM	12.0	0.938	180	\$194,431	3	8	3.6933
C83-T080R39S28-RS06		FM	24.0	0.870	200	\$180,336	3	8	4.1037
C83-T079R38S08-RS08		FM	26.0	0.062	200	\$12,852	3	8	4.1037
C83-T079R38S30-RS05		Local	24.0	0.149	230	\$30,885	3	8	4.7194
C83-T079R37S21-RS03		Local	26.0	0.267	210	\$55,345	3	8	4.3089
C83-T080R38S34-RS01		Local	28.0	0.031	200	\$6,426	3	8	4.1037
C83-T080R40S23-RS06		Local	22.0	0.023	230	\$4,768	3	8	4.7196
C83-T079R37S10-RS02	M56	FM-FAS	30.0	0.988	170	\$204,795	3	8	3.2329
C83-T080R39S28-RS04		FM	12.0	0.131	200	\$27,154	3	8	4.1037
C83-T078R39S02-RS10		Local	24.0	0.273	120	\$56,588	3	8	2.2820
C83-T080R39S21-RS24		Local	24.0	0.050	140	\$10,364	3	8	2.6624
C83-T079R38S22-RS04		FM	28.0	1.001	140	\$207,490	3	8	2.6624
C83-T080R37S34-RS02	M56	FM-FAS	24.0	1.013	130	\$209,977	3	8	2.4722
C83-T078R40S33-RS01	F66	FM	26.0	0.131	130	\$27,154	3	8	2.4723
C83-T079R38S05-RS02	M36	FM-FAS	26.0	0.972	180	\$201,479	3	8	3.6933
C83-T079R38S07-RS04	M36	FM-FAS	30.0	0.625	180	\$257,802	3	8	3.6933
		Totals		20.285		\$4,541,316			

84 Sioux

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C84-T097R44S36-RS02		Local	22.0	1.001	220	\$187,029	4	8	2.3222
C84-T095R45S07-RS01	B44	FM	28.0	0.970	310	\$155,426	6	8	2.0242
C84-T097R46S27-RS02		Local	26.0	1.032	250	\$362,039	5	8	2.0652
C84-T094R48S02-RS08		Local	20.0	0.497	340	\$92,861	4	8	3.8411
C84-T095R44S33-RS11		Local	26.0	0.426	290	\$75,466	5	8	2.5891
C84-T094R43S01-RS02		Local	24.0	0.497	250	\$88,044	5	8	2.0652
C84-T095R44S34-RS04		Local	26.0	0.250	510	\$44,288	5	8	4.7563
C84-T095R45S05-RS05		Local	22.0	0.423	250	\$79,034	4	8	2.6389
C84-T095R45S08-RS01	B44	FM	30.0	0.497	520	\$79,636	6	8	3.5523
C84-T095R44S34-RS02		Local	26.0	0.202	430	\$35,784	5	8	4.0102
C84-T095R45S03-RS03	B42	FM	24.0	0.059	280	\$10,452	5	8	2.4999
C84-T094R43S01-RS04		Local	24.0	0.230	250	\$68,585	5	8	2.0653
C84-T095R45S03-RS05	B42	FM	24.0	0.914	280	\$161,915	5	8	2.4998
C84-T095R45S03-RS01	B42	FM	24.0	0.040	280	\$7,086	5	8	2.4998
C84-T095R44S34-RS06		Local	26.0	0.150	510	\$26,573	5	8	4.7562
C84-T096R45S32-RS03		Local	26.0	0.507	340	\$89,815	5	8	3.0355
		Totals		7.695		\$1,564,033			

85 Story

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratiio
C85-T084R24S23-RS06		Local	18.0	0.118	1150	\$72,720	4	11	4.6404
C85-T084R23S18-RS03		Local	24.0	0.131	500	\$23,207	5	8	4.6631
C85-T083R24S16-RS16		Local	22.0	0.146	320	\$27,279	4	8	3.6151
C85-T084R24S22-RS02		Local	26.0	0.988	280	\$175,025	5	8	2.4998
C85-T085R24S14-RS03		Local	24.0	0.037	340	\$6,555	5	8	3.0357
C85-T084R24S14-RS03		Local	24.0	0.230	260	\$40,745	5	8	2.1478
C85-T083R24S15-RS06		FM-FAS	26.0	0.062	300	\$10,983	5	8	2.6784
C85-T084R24S10-RS04		Local	26.0	0.510	340	\$90,347	5	8	3.0355
C85-T083R24S22-RS02		FM	28.0	1.001	310	\$160,394	6	8	2.0242
C85-T082R23S19-RS06	E63	FM-FAS	20.0	0.441	200	\$82,397	4	8	2.1111
C85-T083R24S16-RS14		Local	22.0	0.103	320	\$19,245	4	8	3.6150
C85-T083R24S21-RS04		Local	22.0	0.373	320	\$69,692	4	8	3.6151
C85-T083R24S06-RS01		FM-FAS+	32.0	0.249	500	\$39,898	6	8	3.4156
C85-T083R24S26-RS05	E57	FM	26.0	0.497	250	\$88,044	5	8	2.0652
C85-T085R24S14-RS01		Local	24.0	0.721	340	\$127,725	5	8	3.0355
C85-T084R24S23-RS07		Local	24.0	0.112	1150	\$66,042	6	11	2.4679
C85-T083R23S17-RS04		Local	28.0	0.497	320	\$79,636	6	8	2.0895
C85-T082R24S24-RS08		Local	20.0	0.037	200	\$6,913	4	8	2.1111
C85-T083R23S17-RS06		Local	26.0	0.497	320	\$88,044	5	8	2.8569
C85-T084R24S11-RS01	E23	Local	32.0	1.001	430	\$160,394	6	8	2.9375
C85-T084R24S14-RS01		Local	24.0	0.758	280	\$134,280	5	8	2.4998
C85-T083R24S06-RS03		FM-FAS+	32.0	0.298	500	\$47,750	6	8	3.4157
		Totals		8.807		\$1,617,313			

Table 13c : Printout of road segments that warrant Upgrade

86 Tama

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C86-T083R16S22-RS04		Local	26.0	0.653	350	\$416,677	5	8	3.1248
C86-T083R16S04-RS06		FM	24.0	0.031	270	\$5,492	5	8	2.4105
C86-T083R15S09-RS08		Local	22.0	0.497	25	\$62,572	1	5	2.0255
C86-T083R16S22-RS03		Local	26.0	0.242	350	\$42,870	5	8	3.1248
C86-T083R15S29-RS03		Local	22.0	0.497	190	\$92,861	4	8	2.0056
C86-T083R15S17-RS12		Local	22.0	0.131	190	\$24,476	4	8	2.0056
C86-T083R15S23-RS04		Local	22.0	0.280	330	\$52,316	4	8	3.7281
C86-T083R15S28-RS04		Local	22.0	0.603	190	\$112,666	4	8	2.0056
C86-T083R15S23-RS06		Local	20.0	0.218	330	\$40,732	4	8	3.7281
C86-T083R15S20-RS04		Local	22.0	1.330	190	\$248,500	4	8	2.0056
C86-T083R16S09-RS04		FM	24.0	0.740	270	\$131,091	5	8	2.4105
C86-T084R13S19-RS03		FM	24.0	0.037	330	\$6,555	5	8	2.9464
C86-T083R16S09-RS08		FM	24.0	0.131	320	\$23,207	5	8	2.8570
C86-T083R16S15-RS04		Local	26.0	0.479	350	\$228,960	5	8	3.1247
C86-T083R16S17-RS04		FM	24.0	0.131	320	\$23,207	5	8	2.8570
C86-T083R16S08-RS03		FM	24.0	0.193	320	\$34,190	5	8	2.8569
C86-T082R15S28-RS01		Local	22.0	0.510	30	\$64,209	1	5	2.4304
C86-T083R15S23-RS08		Local	18.0	0.497	330	\$92,861	4	8	3.7281
C86-T083R15S31-RS02		FM	22.0	0.497	200	\$92,861	4	8	2.1111
C86-T084R13S19-RS01		FM	24.0	0.031	300	\$5,492	5	8	2.6788
C86-T083R16S09-RS06		FM	24.0	0.292	320	\$259,418	5	8	2.8569
Totals				8.020		\$2,061,210			

88 Union

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C88-T072R30S07-RS03		Local	24.0	0.193	330	\$34,190	5	8	2.9462
C88-T072R29S16-RS12		Local	14.0	0.031	289	\$5,792	4	8	3.2649
C88-T072R29S19-RS11		Local	22.0	0.140	25	\$17,626	1	5	2.0263
C88-T072R29S19-RS09		Local	22.0	0.220	25	\$27,698	1	5	2.0260
C88-T072R29S07-RS04		Local	26.0	0.062	320	\$10,983	5	8	2.8571
C88-T071R29S18-RS02		Local	24.0	0.050	130	\$10,364	3	8	2.4717
Totals				0.696		\$106,654			

89 Van Buren

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C89-T070R11S08-RS19	J12	FM	14.0	0.037	220	\$6,913	4	8	2.3221
C89-T068R08S17-RS05		FM	22.0	0.472	190	\$88,190	4	8	2.0055
C89-T068R08S15-RS03		FM	22.0	0.802	210	\$201,193	4	8	2.2167
C89-T068R08S16-RS05		FM	22.0	0.249	210	\$88,351	4	8	2.2167
C89-T068R08S16-RS03		FM	22.0	0.603	280	\$112,666	4	8	3.1632
C89-T068R08S13-RS03		FM	22.0	1.013	210	\$189,271	4	8	2.2167
C89-T068R08S16-RS07		FM	22.0	1.181	190	\$220,661	4	8	2.0055
C89-T068R10S31-RS04		Local	24.0	0.099	420	\$17,538	5	8	3.9170
C89-T069R10S27-RS09		Local	28.0	0.068	310	\$10,896	6	8	2.0241
C89-T069R10S27-RS11		Local	20.0	0.118	330	\$22,047	4	8	3.7280
C89-T068R08S22-RS04		FM	22.0	1.137	210	\$212,440	4	8	2.2167
C89-T068R08S15-RS04		FM	22.0	0.609	190	\$135,537	4	8	2.0055
C89-T069R08S32-RS03		Local	18.0	0.398	50	\$63,574	1	6	3.5329
Totals				6.786		\$1,369,276			

90 Wapello

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C90-T071R13S10-RS02		FM	26.0	0.429	350	\$75,997	5	8	3.1248
C90-T072R13S09-RS15		FM	22.0	0.398	220	\$74,363	4	8	2.3222
C90-T071R13S03-RS04		FM	26.0	0.559	350	\$99,027	5	8	3.1247
C90-T071R13S02-RS04		FM	22.0	0.522	250	\$97,532	4	8	2.6389
C90-T071R12S21-RS03		Local	20.0	0.118	200	\$22,047	4	8	2.1111
C90-T072R12S16-RS01	H31	FM-FAS	24.0	0.851	250	\$150,755	5	8	2.0652
C90-T071R14S28-RS02	V17	FM-FAS	24.0	0.118	350	\$20,904	5	8	3.1246
C90-T072R13S31-RS03		Local	18.0	0.277	200	\$51,755	4	8	2.1111
C90-T072R13S09-RS04		Local	23.0	0.068	300	\$12,046	5	8	2.6784
C90-T072R13S29-RS07		FM-FAS	24.0	0.118	450	\$18,908	6	8	3.0740
C90-T072R13S28-RS02		Local	24.0	0.292	430	\$51,728	5	8	4.0102
C90-T072R13S10-RS07		FM	22.0	0.050	220	\$9,342	4	8	2.3222
C90-T072R13S10-RS05		FM	22.0	0.249	220	\$46,524	4	8	2.3223
C90-T072R13S09-RS14		FM	22.0	0.031	350	\$5,792	4	8	3.9538
C90-T071R13S10-RS04		FM	24.0	0.709	350	\$113,605	6	8	2.2854
C90-T071R13S01-RS06		FM	28.0	0.379	390	\$60,728	6	8	2.5466
C90-T072R13S31-RS06		Local	18.0	0.102	200	\$19,058	4	8	2.1111
C90-T071R12S28-RS03		Local	20.0	1.150	200	\$284,619	4	8	2.1111
C90-T071R12S26-RS07	V47	Local	22.0	0.249	300	\$46,524	4	8	3.3892
C90-T071R13S18-RS03		Local	18.0	0.752	220	\$140,505	4	8	2.3222
C90-T071R12S27-RS03		Local	22.0	0.311	210	\$58,108	4	8	2.2167
C90-T072R13S36-RS08		FM	22.0	0.242	250	\$45,216	4	8	2.6388
C90-T072R13S09-RS17		FM	22.0	0.572	220	\$106,874	4	8	2.3222
C90-T071R13S20-RS03	H47	FM	24.0	0.721	350	\$127,725	5	8	3.1248
C90-T072R13S28-RS03		Local	24.0	0.771	270	\$177,833	5	8	2.4105
C90-T071R12S26-RS06	V47	FM	22.0	0.522	220	\$97,532	4	8	2.3222
C90-T073R14S31-RS04	H21	FM-FAS	38.0	0.653	340	\$126,172	6	8	2.2201
C90-T072R13S09-RS05		Local	14.0	0.118	350	\$22,047	4	8	3.9539
C90-T072R13S27-RS03		Local	22.0	0.087	270	\$16,255	4	8	3.0503
C90-T071R13S09-RS04	J12	FM-FAS	24.0	0.653	310	\$122,429	5	8	2.7676
C90-T071R13S19-RS03	H47	FM	24.0	1.380	460	\$244,467	5	8	4.2900
C90-T071R13S04-RS03		FM	26.0	0.858	350	\$151,995	5	8	3.1248
C90-T072R13S28-RS01		Local	22.0	0.280	270	\$52,316	4	8	3.0502
C90-T072R14S09-RS04	H21	FM-FAS	24.0	0.758	300	\$134,280	5	8	2.6784
C90-T071R13S08-RS09		Local	24.0	0.081	310	\$14,349	5	8	2.7676
C90-T071R13S01-RS04		FM	22.0	0.447	250	\$83,518	4	8	2.6389
C90-T072R14S22-RS03		Local	24.0	0.510	260	\$90,347	5	8	2.1478
C90-T073R15S25-RS05		Local	18.0	0.087	700	\$53,616	4	11	2.6212
C90-T071R13S17-RS03		Local	18.0	0.758	220	\$141,626	4	8	2.3222
C90-T073R15S36-RS07		FM	24.0	0.559	250	\$99,027	5	8	2.0652
C90-T072R14S21-RS05		Local	24.0	0.249	260	\$44,110	5	8	2.1478
C90-T072R14S06-RS04	H21	FM-FAS	24.0	0.392	340	\$69,443	5	8	3.0355
C90-T072R13S33-RS04		FM	24.0	0.988	350	\$175,025	5	8	3.1248
C90-T072R13S28-RS07		FM-FAS	24.0	0.447	450	\$71,624	6	8	3.0741
C90-T071R13S29-RS03	H47	FM	24.0	0.497	350	\$88,044	5	8	3.1248
C90-T071R12S28-RS05		Local	22.0	0.131	210	\$24,476	4	8	2.2166
Totals				20.493		\$3,840,216			

91 Warren

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C91-T075R23S17-RS02		Local	22.0	0.497	190	\$92,861	4	8	2.0056
C91-T077R25S19-RS02	R35	FM	26.0	1.001	370	\$223,227	5	8	3.3033
C91-T076R23S28-RS05		Local	22.0	0.659	200	\$123,129	4	8	2.1111
C91-T077R24S15-RS02		Local	24.0	0.957	150	\$198,370	3	8	2.8526
C91-T076R25S18-RS06	R35	FM	26.0	0.242	300	\$42,870	5	8	2.6784
C91-T077R25S18-RS04	R35	FM	26.0	0.500	410	\$88,575	5	8	3.8237
C91-T077R24S23-RS04		FM	22.0	0.249	200	\$46,524	4	8	2.1111
C91-T074R25S26-RS06	R50	FM	22.0	0.267	260	\$49,887	4	8	2.7444
C91-T074R25S35-RS02	R50	FM	22.0	1.013	260	\$189,271	4	8	2.7445
C91-T075R24S02-RS04		FM	26.0	0.398	250	\$170,106	5	8	2.0652

Table 13c : Printout of road segments that warrant Upgrade

RdID	Route	SysClass	Width	Length	AAADT	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C91-T076R24S36-RS08		FM	26.0	0.280	250	\$111,995	5	8	2.0652
C91-T077R23S14-RS04		FM	22.0	0.149	360	\$26,395	5	8	3.2141
C91-T077R23S09-RS06		Local	20.0	0.062	200	\$12,852	3	8	4.1037
C91-T076R24S10-RS07		Local	22.0	0.206	200	\$38,490	4	8	2.1111
C91-T077R24S17-RS04		Local	26.0	0.081	500	\$14,349	5	8	4.6629
C91-T077R24S08-RS08		FM-FAS	26.0	0.240	250	\$42,516	5	8	2.0652
C91-T077R24S03-RS68		Local	22.0	0.677	780	\$417,217	4	11	2.9208
C91-T076R23S10-RS06	G36	FM	22.0	0.314	200	\$58,668	4	8	2.1111
C91-T076R25S10-RS06	R45	FM	22.0	0.075	250	\$14,013	4	8	2.6390
C91-T077R24S11-RS06		FM	22.0	0.479	250	\$89,497	4	8	2.6389
C91-T077R25S14-RS10	R45	FM-FAS	28.0	0.031	330	\$4,967	6	8	2.1548
C91-T077R24S10-RS06		Local	24.0	0.280	150	\$58,039	3	8	2.8526
C91-T076R25S03-RS08	R45	FM	22.0	0.503	250	\$93,982	4	8	2.6389
C91-T076R25S09-RS03	G6R	FM	36.0	0.920	330	\$147,415	6	8	2.1548
C91-T077R24S22-RS02		Local	24.0	0.214	150	\$155,659	3	8	2.8525
C91-T077R25S16-RS02		FM	26.0	0.497	370	\$88,044	5	8	3.3033
C91-T076R23S21-RS06		Local	22.0	0.230	270	\$42,974	4	8	3.0502
C91-T076R23S20-RS09		Local	22.0	0.752	210	\$140,505	4	8	2.2167
C91-T077R23S15-RS05		FM	26.0	0.292	360	\$46,788	6	8	2.3507
C91-T076R25S21-RS08		FM	22.0	0.168	200	\$31,390	4	8	2.1111
C91-T077R24S15-RS04		Local	24.0	0.053	150	\$10,986	3	8	2.8528
C91-T076R25S18-RS04	R35	FM	26.0	0.261	260	\$46,236	5	8	2.1478
C91-T077R25S30-RS02	R35	FM	26.0	1.001	310	\$208,347	5	8	2.7676
C91-T077R23S15-RS03		FM	26.0	0.441	360	\$78,123	5	8	3.2140
C91-T077R24S05-RS24	R57	FM-FAS	22.0	0.395	270	\$130,218	4	8	3.0502
C91-T077R24S11-RS08		FM	22.0	0.037	200	\$6,913	4	8	2.1111
C91-T077R24S31-RS04		Local	22.0	0.497	220	\$92,861	4	8	2.3222
C91-T077R24S23-RS03		FM	22.0	0.752	240	\$140,505	4	8	2.5333
C91-T075R23S04-RS02		Local	22.0	0.522	220	\$209,402	4	8	2.3222
C91-T076R23S10-RS10	G36	FM	22.0	0.276	200	\$51,568	4	8	2.1111
C91-T077R24S07-RS05		Local	28.0	0.497	380	\$79,636	6	8	2.4813
C91-T077R23S22-RS04		Local	22.0	0.970	200	\$281,212	4	8	2.1111
C91-T076R23S28-RS04		Local	22.0	0.218	270	\$40,732	4	8	3.0503
C91-T075R23S05-RS02		Local	24.0	0.771	350	\$136,583	5	8	3.1247
C91-T077R25S31-RS02	R35	FM	26.0	0.541	310	\$95,838	5	8	2.7676
C91-T076R23S33-RS01		Local	22.0	0.758	240	\$141,626	4	8	2.5333
C91-T077R24S24-RS03		FM	22.0	1.013	320	\$189,271	4	8	3.6151
C91-T077R24S04-RS01		Local	22.0	0.274	1180	\$168,859	4	11	4.7615
C91-T077R24S14-RS04		FM	22.0	1.013	200	\$189,271	4	8	2.1111
C91-T076R25S19-RS02	R35	FM	26.0	1.038	300	\$183,882	5	8	2.6784
C91-T075R24S13-RS01		FM	26.0	0.851	250	\$150,755	5	8	2.0652
C91-T075R24S14-RS03		FM	26.0	0.261	250	\$46,236	5	8	2.0652
C91-T077R24S11-RS04		FM	22.0	0.472	250	\$88,190	4	8	2.6389
C91-T077R25S14-RS06	R45	FM-FAS	28.0	0.037	330	\$5,929	6	8	2.1550
C91-T075R23S17-RS04		Local	22.0	0.497	190	\$92,861	4	8	2.0056
C91-T076R23S28-RS06		Local	22.0	0.497	340	\$92,861	4	8	3.8411
C91-T077R25S18-RS02	R35	FM	26.0	0.500	410	\$88,575	5	8	3.8237
C91-T077R24S10-RS03		FM	22.0	1.001	250	\$187,029	4	8	2.6389
C91-T076R25S30-RS02	R35	FM	26.0	0.261	350	\$46,236	5	8	3.1248
C91-T076R24S36-RS03		Local	22.0	0.410	280	\$76,605	4	8	3.1632
C91-T076R24S13-RS03		FM	22.0	0.497	210	\$92,861	4	8	2.2167
C91-T074R22S07-RS02		FM	22.0	1.001	210	\$254,109	4	8	2.2167
C91-T075R24S01-RS02		FM	26.0	0.211	250	\$37,379	5	8	2.0652
C91-T075R23S20-RS02		Local	22.0	0.497	190	\$92,861	4	8	2.0056
C91-T077R22S31-RS22		Local	18.0	0.062	250	\$11,584	4	8	2.6391
C91-T076R23S33-RS02		Local	22.0	1.013	220	\$189,271	4	8	2.3222
C91-T077R23S09-RS05		Local	22.0	0.410	340	\$76,605	4	8	3.8410
C91-T077R24S11-RS01		FM	22.0	0.199	250	\$37,182	4	8	2.6389
C91-T077R25S31-RS04	R35	FM	26.0	0.242	250	\$42,870	5	8	2.0652
C91-T076R25S28-RS02		FM	22.0	0.510	200	\$95,290	4	8	2.1111
C91-T074R22S18-RS04		FM	22.0	1.019	210	\$190,392	4	8	2.2167
C91-T076R23S10-RS01	G36	FM	22.0	0.249	200	\$46,524	4	8	2.1111
C91-T076R23S21-RS04		Local	22.0	0.752	270	\$140,505	4	8	3.0503
C91-T076R23S32-RS01		Local	22.0	1.001	360	\$187,029	4	8	4.0670
C91-T076R23S32-RS02		Local	20.0	1.063	350	\$198,613	4	8	3.9540
C91-T076R24S13-RS06		Local	22.0	0.131	250	\$24,476	4	8	2.6389
C91-T076R23S28-RS02		Local	22.0	0.280	1210	\$172,556	4	11	4.8825
Totals				37.485		\$8,108,029			

92 Washington

RdID:	Route	SysClass	Width	Length:	AAADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C92-T074R07S24-RS14	G62	FM-FAS	22.0	0.099	460	\$15,863	6	8	3.1424
C92-T077R07S29-RS05	G16	FM-FAS	22.0	0.970	190	\$181,237	4	8	2.0056
C92-T075R07S08-RS03		Local	22.0	0.019	210	\$3,550	4	8	2.2161
C92-T077R07S18-RS02		Local	22.0	0.254	250	\$47,458	4	8	2.6389
C92-T077R08S01-RS01		Local	22.0	0.497	200	\$92,861	4	8	2.1111
C92-T077R07S03-RS06		FM	22.0	0.143	230	\$26,718	4	8	2.4278
C92-T077R07S18-RS03		Local	22.0	0.467	250	\$87,255	4	8	2.6389
C92-T077R07S30-RS26		Local	20.0	0.174	220	\$32,511	4	8	2.3222
C92-T075R08S24-RS03	G38	FM-FAS	30.0	0.131	1050	\$77,246	6	11	2.2533
C92-T077R07S10-RS02		FM	22.0	0.497	230	\$92,861	4	8	2.4278
C92-T075R07S08-RS04		Local	22.0	0.037	230	\$6,913	4	8	2.4277
C92-T077R08S14-RS02		Local	22.0	0.569	250	\$106,313	4	8	2.6389
C92-T075R07S08-RS01		Local	22.0	0.230	210	\$42,974	4	8	2.2167
C92-T077R07S19-RS04		Local	22.0	0.472	220	\$88,190	4	8	2.3222
C92-T077R07S08-RS06	W62	FM	22.0	0.497	200	\$92,861	4	8	2.1111
C92-T077R08S01-RS03		Local	22.0	0.497	200	\$92,861	4	8	2.1111
C92-T077R07S20-RS06		Local	22.0	0.267	220	\$49,887	4	8	2.3222
Totals				5.820		\$1,137,557			

93 Wayne

RdID:	Route	SysClass	Width	Length:	AAADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C93-T069R21S29-RS02	S34	FM	28.0	0.249	340	\$39,898	6	8	2.2201
C93-T070R22S28-RS02	S16	FM-FAS	22.0	0.050	290	\$9,342	4	8	3.2759
C93-T070R22S28-RS06	S16	FM-FAS	22.0	0.068	220	\$12,705	4	8	2.3220
C93-T069R21S30-RS04		FM	26.0	0.249	350	\$44,110	5	8	3.1248
C93-T069R21S19-RS04		FM	24.0	0.199	290	\$35,253	5	8	2.5891
C93-T070R22S28-RS04	S16	FM-FAS	22.0	0.062	240	\$11,584	4	8	2.5332
C93-T069R21S19-RS05		FM	24.0	0.149	270	\$26,395	5	8	2.4105
C93-T070R22S21-RS06	S16	FM-FAS	22.0	0.062	250	\$11,584	4	8	2.6391
C93-T069R21S20-RS06		FM	24.0	0.168	340	\$29,761	5	8	3.0355
C93-T070R20S16-RS03	J18	FM	28.0	0.497	505	\$79,636	6	8	3.4498
C93-T069R21S20-RS01		FM	24.0	0.168	270	\$29,761	5	8	2.4105
C93-T069R21S19-RS03		FM	24.0	0.081	290	\$14,349	5	8	2.5891
Totals				2.002		\$344,380			

Table 13c : Printout of road segments that warrant Upgrade

94 Webster

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C94-T088R28S21-RS03		Local	24.0	1.268	260	\$224,627	5	8	2.1478
C94-T088R28S08-RS35		Local	22.0	0.012	2600	\$6,885	7	11	3.3310
C94-T088R30S21-RS05		Local	14.0	0.068	250	\$12,705	4	8	2.6389
C94-T088R30S19-RS01	D33	Local	24.0	0.982	270	\$173,962	5	8	2.4105
C94-T086R28S14-RS05		Local	26.0	0.249	250	\$44,110	5	8	2.0652
C94-T088R27S03-RS04		FM	26.0	0.497	270	\$88,044	5	8	2.4105
C94-T088R28S08-RS01		Local	24.0	0.957	250	\$169,533	5	8	2.0652
C94-T089R29S25-RS01		Local	24.0	0.112	910	\$67,937	5	11	2.8035
Totals			4.145			\$787,803			

95 Winnebago

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C95-T099R25S15-RS02		Local	22.0	1.001	240	\$187,029	4	8	2.5333
C95-T098R24S26-RS06		Local	24.0	0.050	310	\$8,858	5	8	2.7679
C95-T099R26S17-RS07		Local	22.0	0.267	250	\$49,887	4	8	2.6389
C95-T098R23S28-RS05		Local	12.0	0.578	40	\$92,326	1	6	2.8262
C95-T098R24S26-RS04		Local	24.0	0.441	310	\$78,123	5	8	2.7676
Totals				2.337		\$416,223			

96 Winneshiek

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C96-T098R08S10-RS05		Local	20.0	0.510	210	\$95,290	4	8	2.2167
C96-T098R07S07-RS05	A6W	FM	24.0	0.659	340	\$116,742	5	8	3.0355
C96-T098R07S09-RS03	A6W	FM	24.0	0.522	340	\$92,472	5	8	3.0355
C96-T098R08S13-RS17	A6W	FM	24.0	0.012	1750	\$6,885	7	11	2.0826
C96-T098R08S11-RS05		Local	20.0	0.392	210	\$73,242	4	8	2.2167
C96-T098R08S15-RS04		Local	20.0	0.510	200	\$95,290	4	8	2.1111
C96-T099R08S33-RS03		FM	22.0	0.740	250	\$138,263	4	8	2.6389
C96-T099R07S31-RS06		FM	22.0	0.193	230	\$36,061	4	8	2.4277
C96-T098R08S13-RS11	A6W	FM	24.0	0.050	1940	\$78,189	7	11	2.3087
C96-T098R07S07-RS07	A6W	FM	30.0	0.159	400	\$25,477	6	8	2.7325
C96-T097R07S06-RS03		FM	24.0	0.040	250	\$7,086	5	8	2.0652
C96-T098R08S14-RS03		Local	20.0	0.653	210	\$122,008	4	8	2.2166
C96-T098R08S28-RS03		Local	22.0	0.833	340	\$295,627	4	8	3.8410
C96-T098R08S10-RS03		Local	18.0	0.510	290	\$95,290	4	8	3.2762
C96-T098R08S13-RS13	A6W	FM	24.0	0.050	1830	\$28,689	7	11	2.1778
C96-T098R08S13-RS02		Local	20.0	0.311	210	\$58,108	4	8	2.2167
C96-T098R07S08-RS03	A6W	FM	24.0	1.218	340	\$215,769	5	8	3.0355
C96-T098R08S13-RS15	A6W	FM	24.0	0.085	1790	\$48,771	7	11	2.1302
C96-T098R08S27-RS03		Local	22.0	0.118	340	\$22,047	4	8	3.8411
C96-T098R08S13-RS19	A6W	FM	24.0	0.180	1750	\$103,280	7	11	2.0826
C96-T098R08S10-RS08		Local	20.0	0.298	200	\$55,679	4	8	2.1111
Totals				8.043		\$1,810,266			

97 Woodbury

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C97-T088R47S16-RS04		Local	22.0	0.261	240	\$48,766	4	8	2.5334
C97-T089R46S33-RS06	K39	FM	26.0	0.398	280	\$70,506	5	8	2.4998
C97-T089R46S31-RS09		Local	22.0	0.298	1140	\$180,761	5	11	3.5121
C97-T088R47S17-RS11		Local	22.0	0.727	240	\$135,834	4	8	2.5333
C97-T086R45S25-RS08		FM	22.0	0.180	190	\$33,632	4	8	2.0056
C97-T089R46S35-RS04		Local	26.0	0.292	340	\$51,728	5	8	3.0355
C97-T086R45S36-RS04	K67	FM	22.0	0.671	190	\$125,371	4	8	2.0056
C97-T088R43S12-RS06		Local	32.0	0.559	340	\$89,570	6	8	2.2201
C97-T088R47S20-RS07		Local	26.0	0.118	300	\$20,904	5	8	2.6784
C97-T088R47S29-RS03		Local	26.0	0.578	300	\$102,393	5	8	2.6784
C97-T089R46S28-RS04		Local	26.0	0.068	280	\$12,046	5	8	2.4999
C97-T089R46S21-RS08		Local	20.0	0.031	190	\$5,792	4	8	2.0057
C97-T088R47S21-RS06		Local	26.0	0.168	330	\$29,761	5	8	2.9463
C97-T089R46S28-RS06	K39	FM	26.0	0.932	280	\$236,279	5	8	2.4998
C97-T089R46S33-RS04	K39	FM	22.0	0.758	230	\$141,626	4	8	2.4278
C97-T087R47S05-RS03		Local	22.0	0.162	300	\$30,268	4	8	3.3892
C97-T089R46S29-RS03	D18	Local	22.0	1.001	250	\$187,029	4	8	2.6389
C97-T088R47S21-RS08		Local	26.0	0.410	300	\$72,632	5	8	2.6784
Totals				7.612		\$1,574,899			

99 Wright

RdID:	Route	SysClass	Width	Length:	AADT:	UpgradeCost	LOS ₀₀	LOS _{opt}	Svgs/Cost ratio
C99-T093R25S20-RS01	C20	FM	20.0	0.099	230	\$76,930	4	8	2.4278
C99-T092R23S27-RS06	R65	FM	24.0	0.235	530	\$41,630	5	8	4.9428
C99-T091R24S19-RS01		Local	26.0	0.988	1320	\$599,302	5	11	4.3339
Totals				1.322		\$717,862			

	FINAL REPORT	SUPPLEMENTAL BOOKLET
	<p>Total Cost of Transportation analysis of road and highway issues</p> <p>Phase II A restudy of Iowa county roads using FY2002 data</p>	<p>CONTAINS DATA AND RESULTS TABLES REFERRED TO IN THE TEXT OF THE MAIN REPORT.</p>
	<p>September 2003</p> <p>Submitted to:</p> <p>Highway Division of the Iowa Department of Transportation and Iowa Highway Research Board</p> <p>Project No. TR-477</p>	<p>TABLE 13 D</p>
	<p>Stephen W. De Vries, P.E. Iowa County Engineers Association Service Bureau 501 SW 7th, Suite Q Des Moines, Iowa 50309</p>	

Table 13d : Printout of road segments that warrant Downgrade

3 Allamakee

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C03-T096R06S16-RS02		Local	18.0	0.050	10	\$0	10	3
Totals						\$0		

4 Appanoose

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C04-T070R18S16-RS20		Local	26.0	0.068	10	\$0	11	3
C04-T070R19S01-RS06		Local	26.0	0.062	20	\$0	11	5
C04-T069R19S28-RS05		Local	18.0	0.423	25	\$0	11	5
C04-T070R19S01-RS13		Local	19.0	0.068	20	\$0	11	5
C04-T070R18S16-RS08		Local	26.0	0.037	10	\$0	11	3
C04-T069R19S34-RS03		Local	18.0	0.180	25	\$0	11	5
C04-T070R18S16-RS10		Local	26.0	0.062	20	\$0	11	5
C04-T070R19S01-RS15		Local	19.0	0.131	20	\$0	11	5
C04-T069R19S27-RS05		Local	18.0	0.528	25	\$0	11	5
C04-T070R19S01-RS17		Local	19.0	0.031	20	\$0	11	5
C04-T070R18S16-RS18		Local	26.0	0.019	10	\$0	11	3
C04-T070R19S17-RS09	J18	FM-FAS	22.0	0.230	10	\$0	11	3
C04-T070R19S01-RS10		Local	26.0	0.019	20	\$0	11	5
C04-T070R19S01-RS08		Local	19.0	0.131	20	\$0	11	5
C04-T070R18S16-RS14		Local	26.0	0.068	20	\$0	11	5
C04-T070R18S16-RS12		Local	26.0	0.112	10	\$0	11	3
C04-T069R19S28-RS03		Local	18.0	0.249	25	\$0	11	5
C04-T069R19S27-RS07		Local	18.0	0.280	25	\$148,500	11	5
C04-T069R18S35-RS09		Local	16.0	0.122	0	\$0	11	2
C04-T070R19S01-RS07		Local	19.0	0.099	30	\$0	11	5
C04-T070R18S16-RS16		Local	26.0	0.037	10	\$0	11	3
Totals						\$148,500		

5 Audubon

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C05-T079R35S10-RS08		Local	20.0	0.133	10	\$99,120	10	3
C05-T080R35S34-RS04		Local	24.0	0.037	20	\$0	11	5
C05-T080R35S21-RS17		Local	24.0	0.118	10	\$0	11	3
C05-T080R35S27-RS04		Local	22.0	0.068	20	\$0	11	5
Totals						\$99,120		

7 Black Hawk

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C07-T090R14S33-RS20		Local	24.0	0.100	10	\$0	11	3
C07-T090R14S32-RS03		Local	24.0	0.112	10	\$0	11	3
C07-T090R14S32-RS07		Local	24.0	0.152	10	\$0	11	3
C07-T090R14S33-RS17		Local	24.0	0.081	10	\$0	11	3
Totals						\$0		

8 Boone

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C08-T083R27S06-RS01		Local	22.0	0.112	30	\$0	11	5
Totals						\$0		

10 Buchanan

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C10-T089R09S36-RS07		Local	24.0	0.180	30	\$0	11	5
C10-T090R09S22-RS05		Local	24.0	0.068	30	\$0	11	5
C10-T089R09S36-RS08		Local	24.0	0.057	15	\$0	11	5
C10-T090R09S15-RS09		Local	24.0	0.081	10	\$0	11	3
C10-T090R09S15-RS05		Local	24.0	0.050	20	\$0	11	5
C10-T089R09S36-RS09		Local	24.0	0.112	10	\$0	11	3
Totals						\$0		

13 Calhoun

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C13-T088R31S10-RS04	P19	FM-FAS	21.0	0.497	30	\$0	11	5
C13-T088R31S32-RS02	P13	FM	21.0	1.001	20	\$0	11	5
Totals						\$0		

14 Carroll

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C14-T084R34S30-RS03		Local	20.0	0.249	25	\$0	11	5
Totals						\$0		

15 Cass

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C15-T074R36S03-RS04		Local	20.0	0.143	10	\$0	10	3
C15-T074R36S10-RS04		Local	24.0	0.081	10	\$0	10	3
Totals						\$0		

16 Cedar

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C16-T081R02S19-RS04		Local	18.0	0.329	20	\$0	11	5
C16-T082R04S19-RS11		Local	22.0	0.031	5	\$0	10	2
C16-T082R04S19-RS09		Local	22.0	0.062	10	\$0	10	3
C16-T082R04S18-RS03		Local	20.0	0.230	5	\$0	10	2
Totals						\$0		

22 Clayton

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C22-T093R05S26-RS06		Local	22.0	0.037	10	\$0	11	3
C22-T093R05S26-RS04		Local	22.0	0.211	10	\$0	11	3
C22-T095R05S24-RS06		Local	18.0	0.112	15	\$0	11	5
C22-T092R05S01-RS05		Local	20.0	0.560	15	\$0	11	5
Totals						\$0		

23 Clinton

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C23-T083RE3S32-RS06		Local	24.0	0.037	30	\$0	11	5
C23-T083RE3S19-RS04		Local	24.0	0.081	10	\$0	11	3
C23-T082RE3S04-RS12		Local	34.0	0.180	20	\$0	12	5
C23-T083RE3S33-RS14		Local	34.0	0.193	30	\$0	12	5
C23-T083RE3S19-RS05		Local	20.0	0.031	10	\$0	11	3
C23-T081RE4S07-RS03		Local	20.0	0.112	30	\$0	11	5
C23-T083RE5S28-RS08		Local	26.0	0.019	10	\$0	9	3
C23-T083RE3S32-RS10		Local	24.0	0.221	30	\$0	11	5

Table 13d : Printout of road segments that warrant Downgrade

Table 13d : Printout of road segments that warrant Downgrade

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C23-T083RE3S19-RS03	Local		20.0	0.037	30	\$0	11	5
C23-T083RE3S32-RS04	Local		24.0	0.019	30	\$136,793	11	5
C23-T083RE3S33-RS10	Local		24.0	0.087	30	\$0	11	5
C23-T083RE3S32-RS12	Local		24.0	0.224	30	\$0	11	5
C23-T083RE3S19-RS08	Local		24.0	0.021	10	\$0	11	3
C23-T083RE3S19-RS06	Local		24.0	0.093	10	\$0	10	3
Totals				1.355		\$136,793		

24 Crawford

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C24-T083R39S03-RS03	Local		26.0	0.087	10	\$0	10	3
C24-T083R39S04-RS04	Local		26.0	0.249	5	\$0	10	2
Totals				0.336		\$0		

25 Dallas

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C25-T078R26S35-RS08	Local		24.0	0.222	10	\$0	11	3
C25-T078R26S35-RS14	Local		24.0	0.068	10	\$0	11	3
C25-T078R28S33-RS05	Local		36.0	0.249	20	\$0	12	5
C25-T079R27S20-RS05	Local		24.0	0.037	10	\$0	11	3
C25-T078R26S35-RS03	Local		30.0	0.061	10	\$0	11	3
C25-T078R26S35-RS16	Local		24.0	0.158	10	\$0	11	3
C25-T078R26S35-RS12	Local		24.0	0.100	10	\$0	11	3
C25-T078R26S35-RS06	Local		24.0	0.232	10	\$0	11	3
C25-T078R26S35-RS10	Local		24.0	0.080	10	\$0	11	3
C25-T078R26S35-RS15	Local		24.0	0.100	10	\$0	11	3
C25-T078R26S35-RS13	Local		30.0	0.085	10	\$0	11	3
C25-T079R27S26-RS05	Local		24.0	0.160	10	\$0	11	3
C25-T078R28S28-RS12	FM-FAS		22.0	0.099	10	\$0	11	3
C25-T078R26S35-RS11	Local		30.0	0.068	10	\$0	11	3
C25-T079R27S30-RS11	Local		22.0	0.168	10	\$0	10	3
C25-T078R26S35-RS04	Local		24.0	0.165	10	\$0	11	3
C25-T078R26S35-RS05	Local		30.0	0.093	10	\$0	11	3
Totals				2.145		\$0		

26 Davis

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C26-T069R13S19-RS03	Local		24.0	0.068	30	\$0	11	5
Totals				0.068		\$0		

27 Decatur

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C27-T067R25S21-RS09	J66	FM-FAS	22.0	0.408	20	\$0	11	5
Totals				0.408		\$0		

28 Delaware

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C28-T089R05S32-RS15	Local		24.0	0.031	20	\$0	11	5
C28-T089R04S06-RS04	Local		14.0	0.081	10	\$0	10	3
C28-T089R04S06-RS06	Local		14.0	0.031	10	\$0	10	3
C28-T089R05S32-RS17	Local		24.0	0.056	20	\$0	11	5
C28-T089R04S06-RS08	Local		12.0	0.030	10	\$0	10	3
C28-T089R04S06-RS03	Local		12.0	0.051	10	\$0	10	3
Totals				0.280		\$0		

29 Des Moines

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C29-T070R03S15-RS06	Local		20.0	0.093	10	\$0	10	3
C29-T069R03S34-RS04	Local		24.0	0.029	10	\$0	11	3
C29-T069R03S35-RS04	Local		24.0	0.034	20	\$0	11	5
C29-T069R03S33-RS13	Local		24.0	0.034	10	\$0	11	3
Totals				0.190		\$0		

30 Dickinson

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C30-T099R36S29-RS15	Local		24.0	0.220	15	\$0	11	5
C30-T099R36S29-RS13	Local		24.0	0.253	15	\$0	11	5
C30-T099R36S11-RS28	Local		22.0	0.037	10	\$0	10	3
C30-T099R36S11-RS26	Local		22.0	0.050	10	\$0	10	3
C30-T099R36S11-RS18	Local		22.0	0.050	10	\$0	10	3
C30-T099R36S11-RS20	Local		22.0	0.050	10	\$0	10	3
C30-T099R36S11-RS22	Local		22.0	0.050	10	\$0	10	3
Totals				0.710		\$0		

31 Dubuque

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C31-T090RE2S34-RS08	Local		20.0	0.019	10	\$0	11	3
C31-T088RE2S32-RS08	Local		18.0	0.131	10	\$0	10	3
C31-T090RE2S34-RS10	Local		20.0	0.037	10	\$0	11	3
C31-T088RE2S29-RS10	Local		20.0	0.037	10	\$0	10	3
C31-T088RE2S29-RS08	Local		20.0	0.062	10	\$0	10	3
C31-T087R01S26-RS05	Local		18.0	0.081	10	\$0	10	3
C31-T087RE1S01-RS07	Local		18.0	0.398	10	\$0	10	3
C31-T087RE1S01-RS12	Local		18.0	0.118	30	\$0	11	5
C31-T088RE2S01-RS03	Local		18.0	0.019	10	\$0	10	3
C31-T088R01S31-RS05	Local		24.0	0.041	10	\$0	11	3
C31-T088RE3S06-RS13	Local		18.0	0.037	10	\$0	10	3
Totals				0.980		\$0		

33 Fayette

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C33-T091R10S07-RS20	Local		22.0	0.068	35	\$0	11	5
C33-T091R10S07-RS10	Local		22.0	0.062	20	\$0	11	5
C33-T091R10S07-RS18	Local		22.0	0.068	20	\$0	11	5
C33-T091R10S07-RS15	Local		22.0	0.068	35	\$0	11	5
Totals				0.266		\$0		

34 Floyd

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C34-T095R16S11-RS04	Local		24.0	0.175	10	\$0	10	3
C34-T096R16S27-RS04	Local		22.0	0.031	10	\$0	10	3
C34-T096R16S27-RS06	Local		22.0	0.012	10	\$0	10	3
C34-T095R16S14-RS03	Local		22.0	0.311	20	\$0	11	5
C34-T095R16S14-RS01	Local		22.0	0.528	20	\$0	11	5
C34-T095R16S11-RS06	Local		22.0	0.308	10	\$0	11	3
C34-T096R16S22-RS08	Local		22.0	0.075	10	\$0	10	3
Totals				1.440		\$0		

Table 13d : Printout of road segments that warrant Downgrade

Table 13d : Printout of road segments that warrant Downgrade

35 Franklin

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C35-T092R19S35-RS07		Local	24.0	0.112	10	\$0	11	3
C35-T092R20S15-RS13		Local	31.0	0.019	10	\$0	11	3
C35-T090R22S07-RS07		Local	24.0	0.230	10	\$0	10	3
C35-T090R22S07-RS06		Local	22.0	0.398	10	\$0	10	3
C35-T090R22S07-RS08		Local	24.0	0.280	10	\$0	10	3
C35-T092R19S35-RS05		Local	24.0	0.149	10	\$0	10	3
Totals				1.188		\$0		

36 Fremont

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C36-T068R43S28-RS02		Local	22.0	0.125	20	\$0	11	5
C36-T068R42S22-RS06		Local	22.0	0.199	10	\$0	11	3
C36-T068R42S22-RS07		Local	22.0	0.157	10	\$0	11	3
C36-T069R43S20-RS06	L31	FM	22.0	0.840	35	\$0	11	5
C36-T068R42S22-RS04		Local	22.0	0.194	10	\$0	11	3
C36-T068R40S07-RS06		Local	18.0	0.060	10	\$0	9	3
Totals				1.575		\$0		

37 Greene

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C37-T084R32S35-RS02		Local	22.0	0.068	10	\$0	11	3
Totals				0.068		\$0		

40 Hamilton

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C40-T088R25S18-RS03		Local	24.0	0.099	20	\$0	11	5
Totals				0.099		\$0		

41 Hancock

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C41-T094R26S13-RS08	R26	FM-FAS	22.0	0.839	10	\$0	10	3
C41-T096R24S30-RS03		Local	20.0	0.180	5	\$0	10	2
C41-T097R24S33-RS06	R44	FM-FAS	22.0	0.062	10	\$0	10	3
C41-T096R26S35-RS10	R26	FM-FAS	22.0	0.131	10	\$0	10	3
C41-T096R23S26-RS01		FM	18.0	1.001	10	\$0	10	3
C41-T095R25S15-RS06	R35	FM-FAS	22.0	0.622	10	\$0	11	3
C41-T097R26S06-RS01		Local	22.0	0.081	10	\$0	10	3
Totals				2.916		\$0		

42 Hardin

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C42-T086R19S27-RS06	D67	FM-FAS	22.0	0.050	10	\$0	10	3
Totals				0.050		\$0		

44 Henry

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C44-T071R06S20-RS13		Local	24.0	0.152	30	\$0	11	5
C44-T073R05S28-RS04		Local	12.0	0.068	10	\$0	10	3
C44-T071R06S22-RS09		Local	24.0	0.125	20	\$0	11	5
C44-T071R06S20-RS08		Local	24.0	0.045	30	\$0	11	5
C44-T071R06S22-RS11		Local	24.0	0.146	20	\$0	11	5
C44-T071R06S20-RS17		Local	24.0	0.100	10	\$0	11	3
C44-T071R06S20-RS10		Local	24.0	0.045	30	\$0	11	5
C44-T073R07S09-RS06		Local	24.0	0.037	10	\$0	10	3
C44-T071R06S22-RS03		FM-FAS+	24.0	0.092	20	\$0	11	5
C44-T071R06S22-RS05		FM-FAS+	24.0	0.086	20	\$0	11	5
C44-T071R06S22-RS07		FM-FAS+	24.0	0.125	20	\$0	11	5
Totals				1.021		\$0		

47 Ida

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C47-T087R40S23-RS03		Local	24.0	0.193	25	\$0	11	5
Totals				0.193		\$0		

48 Iowa

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C48-T081R09S27-RS43		Local	22.0	0.130	30	\$0	11	5
C48-T081R09S28-RS31		Local	25.0	0.031	10	\$0	11	3
C48-T081R09S27-RS32		Local	22.0	0.068	30	\$0	11	5
C48-T081R09S28-RS26		Local	22.0	0.118	10	\$0	11	3
C48-T081R10S35-RS05		Local	22.0	0.031	30	\$0	11	5
C48-T081R09S28-RS33		Local	25.0	0.068	20	\$0	11	5
C48-T080R10S22-RS28		Local	24.0	0.081	10	\$0	11	3
C48-T081R09S28-RS28		Local	25.0	0.031	10	\$0	11	3
Totals				0.558		\$0		

49 Jackson

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C49-T085RE2S01-RS08		Local	18.0	0.467	10	\$0	10	3
C49-T086RE2S12-RS05		Local	24.0	0.169	10	\$0	11	3
C49-T084RE2S14-RS11		Local	22.0	0.085	10	\$0	11	3
C49-T085RE2S01-RS06		Local	24.0	0.173	10	\$0	11	3
C49-T085RE2S24-RS08		Local	18.0	0.298	30	\$0	11	5
C49-T085RE2S24-RS07		Local	18.0	0.019	30	\$0	11	5
C49-T086RE2S24-RS12		Local	22.0	0.050	10	\$0	10	3
Totals				1.261		\$0		

50 Jasper

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C50-T080R19S29-RS05		Local	22.0	0.292	20	\$0	11	5
C50-T078R19S19-RS04		Local	24.0	0.087	10	\$0	10	3
C50-T080R20S36-RS09		Local	22.0	0.292	20	\$0	11	5
C50-T080R19S13-RS04		Local	22.0	0.211	20	\$0	11	5
Totals				0.882		\$0		

51 Jefferson

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C51-T071R10S13-RS03		Local	18.0	0.230	15	\$0	11	5
Totals				0.230		\$0		

53 Jones

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:

Table 13d : Printout of road segments that warrant Downgrade

Table 13d : Printout of road segments that warrant Downgrade

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C53-T084R04S12-RS03		Local	18.0	0.430	20	\$0	11	5
C53-T086R04S28-RS06		Local	22.0	0.087	15	\$0	11	5
C53-T086R04S21-RS12		Local	22.0	0.087	15	\$0	11	5
C53-T084R04S12-RS07		Local	22.0	0.118	10	\$0	10	3
Totals						\$0		

54 Keokuk

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C54-T077R11S01-RS04		Local	20.0	0.031	5	\$0	10	2
C54-T075R12S35-RS03	G48	FM-FAS	24.0	0.128	20	\$0	11	5
Totals						\$0		

55 Kossuth

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C55-T095R29S13-RS03		Local	26.0	0.267	10	\$92,730	10	3
C55-T099R28S22-RS03		Local	24.0	0.111	20	\$0	11	5
Totals						\$92,730		

56 Lee

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C56-T068R04S35-RS07		Local	22.0	0.062	10	\$0	10	3
C56-T067R06S01-RS05		Local	18.0	0.188	10	\$0	10	3
C56-T068R04S33-RS22		Local	16.0	0.037	10	\$0	10	3
C56-T067R05S34-RS03		Local	24.0	0.058	35	\$0	11	5
C56-T068R03S07-RS08		Local	24.0	0.311	30	\$0	11	5
C56-T068R03S07-RS10		Local	24.0	0.211	30	\$0	11	5
C56-T066R05S21-RS03		Local	50.0	0.031	10	\$0	12	3
Totals						\$0		

57 Linn

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C57-T084R05S27-RS03		Local	24.0	0.193	10	\$0	10	3
C57-T086R08S28-RS09		Local	22.0	0.023	10	\$0	9	3
C57-T083R08S23-RS12		Local	22.0	0.050	10	\$0	10	3
C57-T085R08S20-RS18		Local	22.0	0.062	10	\$0	9	3
C57-T083R05S07-RS07		Local	22.0	0.024	10	\$0	9	3
C57-T083R06S21-RS06		Local	24.0	0.123	10	\$0	11	3
C57-T084R07S24-RS16		Local	24.0	0.062	10	\$0	10	3
C57-T086R05S33-RS03		Local	22.0	0.077	10	\$0	10	3
C57-T083R06S36-RS08		Local	22.0	0.168	10	\$0	9	3
C57-T083R08S02-RS06		Local	22.0	0.037	10	\$0	9	3
C57-T085R08S20-RS15		Local	22.0	0.081	10	\$0	9	3
C57-T084R07S25-RS08		Local	24.0	0.037	10	\$0	10	3
C57-T083R08S02-RS07		Local	23.0	0.068	10	\$0	9	3
C57-T082R07S29-RS05		Local	23.0	0.100	20	\$0	11	5
C57-T084R08S23-RS22		Local	22.0	0.180	10	\$0	10	3
C57-T082R05S03-RS04		Local	22.0	0.249	10	\$0	10	3
C57-T083R06S29-RS18		Local	28.0	0.249	10	\$0	10	3
C57-T083R08S14-RS06		Local	22.0	0.143	10	\$0	10	3
C57-T084R08S36-RS30		Local	22.0	0.342	10	\$0	9	3
C57-T084R08S23-RS33		Local	22.0	0.061	10	\$0	9	3
Totals						\$0		

58 Louisa

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C58-T075R04S21-RS04		Local	18.0	0.342	30	\$0	11	5
Totals						\$0		

62 Mahaska

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C62-T075R14S09-RS03		Local	18.0	0.392	20	\$0	11	5
C62-T075R15S14-RS05		Local	18.0	0.410	15	\$0	11	5
C62-T075R14S02-RS06		Local	22.0	0.099	30	\$0	11	5
C62-T075R14S08-RS09		Local	18.0	0.099	20	\$0	11	5
Totals						\$0		

63 Marion

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C63-T076R18S17-RS20		Local	22.0	0.016	30	\$0	11	5
C63-T077R18S34-RS09		Local	25.0	0.180	10	\$0	11	3
C63-T076R18S17-RS19		Local	22.0	0.123	30	\$0	11	5
C63-T075R20S11-RS14		Local	22.0	0.151	30	\$0	11	5
C63-T076R18S17-RS18		Local	22.0	0.068	30	\$0	11	5
C63-T075R20S02-RS11		Local	22.0	0.211	10	\$0	11	3
Totals						\$0		

64 Marshall

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C64-T083R17S18-RS05		FM-FAS	22.0	0.034	10	\$0	10	3
C64-T082R17S01-RS10		Local	24.0	0.007	10	\$0	10	3
C64-T082R17S01-RS04		Local	24.0	0.030	10	\$0	10	3
C64-T083R17S18-RS03		FM-FAS	22.0	0.224	10	\$0	10	3
Totals						\$0		

65 Mills

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C65-T072R42S24-RS05		Local	18.0	0.280	10	\$0	11	3
C65-T073R43S23-RS05		Local	22.0	0.094	10	\$0	10	3
C65-T072R42S23-RS05		Local	18.0	0.099	10	\$0	11	3
C65-T072R42S23-RS03		Local	18.0	0.068	10	\$0	11	3
C65-T072R42S17-RS07		Local	18.0	0.280	5	\$0	10	2
C65-T072R42S24-RS03		Local	18.0	0.230	10	\$0	11	3
Totals						\$0		

66 Mitchell

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C66-T098R15S29-RS06		Local	10.0	0.112	10	\$0	10	3
Totals						\$0		

67 Monona

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C67-T084R46S27-RS06		Local	24.0	0.062	5	\$0	11	2
C67-T082R42S29-RS03		Local	20.0	0.037	10	\$0	11	3
Totals						\$0		

Table 13d : Printout of road segments that warrant Downgrade

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C67-T084R46S27-RS06		Local	24.0	0.062	5	\$0	11	2
C67-T082R42S29-RS03		Local	20.0	0.037	10	\$0	11	3
Totals						\$0		

Table 13d : Printout of road segments that warrant Downgrade

Table 13d : Printout of road segments that warrant Downgrade

68 Monroe

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C68-T072R18S22-RS07	H35	Local	18.0	0.528	20	\$0	11	5
C68-T072R18S23-RS05	H35	Local	18.0	0.280	20	\$0	11	5
C68-T072R18S25-RS05	H35	Local	18.0	0.709	20	\$0	11	5
C68-T072R18S26-RS04	H35	Local	18.0	0.050	20	\$0	11	5
C68-T072R17S19-RS03	H35	Local	18.0	0.031	25	\$0	11	5
C68-T072R17S30-RS04	H35	Local	18.0	1.150	25	\$0	11	5
Totals								
						2.748		
						\$0		

69 Montgomery

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C69-T072R38S19-RS04		Local	24.0	0.121	10	\$0	11	3
C69-T072R38S22-RS04		Local	24.0	0.153	10	\$0	11	3
Totals								
						0.274		
						\$0		

70 Muscatine

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C70-T077RE1S22-RS07		Local	24.0	0.226	10	\$0	11	3
C70-T077RE1S11-RS03		Local	22.0	0.123	15	\$0	11	5
C70-T077RE1S22-RS05		Local	24.0	0.123	10	\$0	11	3
Totals								
						0.472		
						\$0		

71 O'Brien

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C71-T094R42S22-RS07		Local	18.0	0.099	10	\$0	10	3
C71-T097R39S28-RS04		Local	24.0	0.131	30	\$0	11	5
Totals								
						0.230		
						\$0		

72 Osceola

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C72-T098R39S20-RS03	M12	FM	22.0	0.112	10	\$0	9	3
Totals								
						0.112		
						\$0		

73 Page

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C73-T069R36S33-RS04		Local	18.0	0.168	5	\$0	11	2
Totals								
						0.168		
						\$0		

75 Plymouth

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C75-T090R47S34-RS04		Local	22.0	0.323	25	\$0	11	5
C75-T092R45S31-RS05		Local	24.0	0.020	20	\$0	11	5
C75-T092R46S36-RS03		Local	24.0	0.190	20	\$0	11	5
C75-T090R46S31-RS12		Local	24.0	0.092	20	\$69,408	11	5
C75-T090R47S36-RS04		Local	24.0	0.222	20	\$0	11	5
C75-T090R47S35-RS06		Local	22.0	0.124	20	\$0	11	5
C75-T092R46S10-RS04		Local	22.0	0.329	20	\$0	11	5
C75-T090R46S31-RS09		Local	22.0	0.151	20	\$0	11	5
C75-T090R46S31-RS07		Local	22.0	0.199	30	\$0	11	5
Totals								
						1.650		
						\$69,408		

76 Pocahontas

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C76-T093R34S27-RS12		Local	22.0	0.031	10	\$0	11	3
Totals								
						0.031		
						\$0		

77 Polk

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C77-T080R24S33-RS15		Local	30.0	0.140	10	\$0	11	3
C77-T080R25S29-RS08		Local	28.0	0.250	10	\$0	11	3
C77-T080R25S29-RS05		Local	28.0	0.340	10	\$0	11	3
C77-T080R25S29-RS11		Local	28.0	0.110	10	\$0	11	3
C77-T080R25S29-RS13		Local	28.0	0.218	30	\$0	11	5
C77-T080R25S29-RS06		Local	28.0	0.150	10	\$0	11	3
C77-T078R23S10-RS09		Local	26.0	0.070	10	\$0	11	3
C77-T080R25S33-RS07		Local	26.0	0.090	20	\$0	11	5
C77-T079R22S29-RS07		Local	24.0	0.160	10	\$0	11	3
C77-T078R23S20-RS06		Local	24.0	0.031	10	\$0	11	3
C77-T080R25S29-RS20		Local	28.0	0.060	10	\$0	11	3
C77-T081R23S25-RS06		Local	22.0	0.037	10	\$41,850	9	3
C77-T080R24S29-RS17		Local	26.0	0.078	20	\$0	11	5
C77-T078R23S15-RS06		Local	30.0	0.060	10	\$0	11	3
C77-T080R25S29-RS22		Local	28.0	0.081	20	\$0	11	5
C77-T080R24S20-RS18		FM-FAS	24.0	0.056	20	\$0	11	5
C77-T080R25S30-RS03		Local	24.0	0.090	10	\$0	11	3
C77-T080R25S29-RS24		Local	24.0	0.050	10	\$0	11	3
C77-T080R24S34-RS14		Local	28.0	0.037	10	\$0	11	3
C77-T080R25S29-RS03		Local	28.0	0.190	10	\$0	11	3
C77-T078R23S20-RS10		Local	24.0	0.193	10	\$0	11	3
C77-T079R24S11-RS30		Local	29.0	0.050	30	\$0	11	5
C77-T079R24S16-RS05		Local	26.0	0.180	10	\$0	9	3
C77-T080R24S20-RS16		Local	30.0	0.394	30	\$0	11	5
C77-T080R24S21-RS17		Local	16.0	0.149	10	\$0	10	3
C77-T080R24S28-RS19		Local	31.0	0.050	20	\$0	11	5
C77-T080R25S09-RS18		Local	29.0	0.062	10	\$0	11	3
C77-T080R22S06-RS07		Local	25.0	0.168	30	\$0	11	5
C77-T080R24S20-RS35		Local	30.0	0.170	10	\$0	11	3
C77-T078R23S20-RS08		Local	24.0	0.062	10	\$0	11	3
C77-T080R24S33-RS13		Local	30.0	0.120	10	\$0	11	3
C77-T078R23S29-RS11		Local	20.0	0.068	10	\$0	10	3
C77-T078R23S29-RS34		Local	20.0	0.118	10	\$0	10	3
C77-T081R22S30-RS03		Local	26.0	0.087	10	\$0	10	3
C77-T079R23S08-RS20		Local	21.0	0.031	10	\$0	10	3
C77-T079R24S11-RS32		Local	29.0	0.094	30	\$0	11	5
C77-T079R24S14-RS46		Local	20.0	0.037	10	\$0	11	3
C77-T078R23S15-RS10		Local	26.0	0.120	10	\$0	11	3
C77-T080R22S12-RS08		Local	24.0	0.087	10	\$0	11	3
C77-T079R24S22-RS13		Local	18.0	0.081	10	\$0	10	3
C77-T080R25S29-RS18		Local	28.0	0.298	30	\$0	11	5
C77-T079R24S03-RS33		Local	25.0	0.050	20	\$0	11	5
C77-T079R24S12-RS09		Local	25.0	0.152	10	\$0	11	3
C77-T078R22S09-RS01		Local	24.0	0.037	10	\$0	10	3
C77-T078R23S02-RS22		FM-FAS	24.0	0.068	10	\$0	11	3
C77-T080R25S33-RS09		Local	26.0	0.143	20	\$0	11	5
C77-T079R23S22-RS32		Local	24.0	0.398	10	\$0	10	3
C77-T080R25S29-RS07		Local	28.0	0.309	10	\$0	11	3
C77-T078R23S32-RS09		Local	20.0	0.218	10	\$0	10	3

Table 13d : Printout of road segments that warrant Downgrade

Table 13d : Printout of road segments that warrant Downgrade

RdID	Rout	SysClass	Width	Length	AADT	UpgradeCost	LOS00	LOSopt
C77-T080R22S07-RS11		Local	25.0	0.149	30	\$0	11	5
C77-T080R24S34-RS42		Local	24.0	0.193	10	\$0	10	3
C77-T080R24S34-RS30		Local	25.0	0.078	30	\$0	11	5
C77-T080R24S32-RS09		Local	30.0	0.070	10	\$0	11	3
C77-T078R23S10-RS08		Local	31.0	0.050	10	\$0	11	3
C77-T079R22S24-RS02		Local	22.0	0.110	10	\$0	10	3
C77-T080R24S34-RS28		Local	25.0	0.078	30	\$0	11	5
C77-T080R24S34-RS07		Local	16.0	0.131	10	\$0	10	3
C77-T080R25S09-RS20		Local	29.0	0.081	10	\$0	11	3
C77-T078R23S15-RS08		Local	30.0	0.150	10	\$0	11	3
C77-T080R22S07-RS10		Local	25.0	0.068	15	\$0	11	5
C77-T080R24S08-RS04		Local	24.0	0.087	10	\$0	10	3
C77-T080R25S29-RS09		Local	24.0	0.060	10	\$0	11	3
C77-T078R23S32-RS16		Local	24.0	0.269	10	\$0	10	3
C77-T080R25S04-RS06		Local	24.0	0.149	10	\$0	11	3
C77-T080R24S35-RS09		Local	30.0	0.118	10	\$0	11	3
C77-T081R25S31-RS08		Local	24.0	0.068	10	\$0	10	3
C77-T081R25S33-RS03	F4R	Local	25.0	0.031	10	\$0	10	3
C77-T080R25S29-RS26		Local	24.0	0.137	10	\$0	11	3
C77-T078R22S14-RS06		Local	24.0	0.057	10	\$0	10	3
C77-T078R23S29-RS32		Local	20.0	0.081	10	\$0	10	3
Totals				8.507		\$41,850		

78 Pottawattamie

RdID	Rout	SysClass	Width	Length	AADT	UpgradeCost	LOS00	LOSopt
C78-T076R40S25-RS03		Local	24.0	0.099	10	\$0	11	3
C78-T075R43S24-RS08		Local	24.0	0.155	20	\$0	11	5
C78-T075R43S25-RS10		FM	24.0	0.222	20	\$0	11	5
C78-T075R43S25-RS14		Local	22.0	0.057	20	\$0	11	5
C78-T075R43S25-RS12		Local	22.0	0.056	20	\$0	11	5
C78-T075R43S33-RS23		Local	22.0	0.031	10	\$0	10	3
C78-T074R43S02-RS19		Local	22.0	0.099	10	\$0	11	3
C78-T074R43S03-RS01		Local	20.0	0.115	10	\$0	11	3
C78-T074R43S02-RS16		Local	22.0	0.094	20	\$0	11	5
C78-T074R43S02-RS17		Local	22.0	0.038	10	\$0	11	3
C78-T074R43S02-RS21		Local	22.0	0.028	10	\$0	11	3
C78-T075R43S24-RS05		Local	24.0	0.193	10	\$0	9	3
C78-T076R44S36-RS01		Local	22.0	0.087	10	\$0	10	3
Totals				1.274		\$0		

79 Poweshiek

RdID	Rout	SysClass	Width	Length	AADT	UpgradeCost	LOS00	LOSopt
C79-T079R15S21-RS06		FM	22.0	0.112	30	\$0	11	5
C79-T079R15S21-RS04		FM	22.0	0.037	30	\$0	11	5
Totals				0.149		\$0		

82 Scott

RdID	Rout	SysClass	Width	Length	AADT	UpgradeCost	LOS00	LOSopt
C82-T078RE5S06-RS13		Local	30.0	0.242	25	\$0	11	5
C82-T078RE2S36-RS07		Local	24.0	0.126	20	\$0	11	5
C82-T078RE5S06-RS09		Local	30.0	0.037	20	\$0	11	5
C82-T078RE5S07-RS01		Local	30.0	0.113	30	\$0	11	5
C82-T078RE5S08-RS09		Local	30.0	0.135	10	\$0	11	3
C82-T078RE5S06-RS16		Local	26.0	0.088	10	\$0	11	3
C82-T078RE5S06-RS14		Local	30.0	0.180	25	\$0	11	5
C82-T080RE4S30-RS02		Local	26.0	0.276	10	\$0	11	3
C82-T079RE3S35-RS04		Local	34.0	0.237	170	\$0	14	8
C82-T078RE5S05-RS09		Local	30.0	0.129	10	\$0	11	3
C82-T080RE4S31-RS90		Local	31.0	0.074	25	\$0	11	5
C82-T078RE5S06-RS11		Local	30.0	0.050	20	\$0	11	5
C82-T078RE5S08-RS07		Local	30.0	0.070	20	\$0	11	5
C82-T078RE5S07-RS03		Local	30.0	0.034	20	\$0	11	5
C82-T078RE5S04-RS11		Local	30.0	0.120	10	\$0	11	3
C82-T080RE2S27-RS06		Local	26.0	0.112	10	\$0	11	3
C82-T080RE4S31-RS95		Local	31.0	0.044	25	\$0	11	5
C82-T080RE4S31-RS92		Local	31.0	0.027	25	\$0	11	5
C82-T080RE3S35-RS06		Local	22.0	0.143	10	\$0	11	3
Totals				2.237		\$0		

83 Shelby

RdID	Rout	SysClass	Width	Length	AADT	UpgradeCost	LOS00	LOSopt
C83-T081R39S13-RS04		Local	18.0	0.131	5	\$0	10	2
C83-T079R37S11-RS03		Local	20.0	0.068	30	\$0	11	5
Totals				0.199		\$0		

86 Tama

RdID	Rout	SysClass	Width	Length	AADT	UpgradeCost	LOS00	LOSopt
C86-T082R16S32-RS04		Local	24.0	0.031	10	\$0	10	3
Totals				0.031		\$0		

87 Taylor

RdID	Rout	SysClass	Width	Length	AADT	UpgradeCost	LOS00	LOSopt
C87-T068R33S22-RS03		Local	18.0	0.517	30	\$0	11	5
C87-T068R33S21-RS05		Local	18.0	0.497	30	\$0	11	5
Totals				1.014		\$0		

88 Union

RdID	Rout	SysClass	Width	Length	AADT	UpgradeCost	LOS00	LOSopt
C88-T072R29S07-RS11		Local	24.0	0.230	10	\$0	10	3
C88-T072R31S03-RS08		Local	29.0	0.142	30	\$0	11	5
C88-T072R30S11-RS03		Local	24.0	0.162	10	\$0	10	3
C88-T072R28S22-RS03		Local	18.0	0.429	20	\$0	11	5
C88-T072R28S21-RS03		Local	18.0	0.168	10	\$0	11	3
C88-T072R28S24-RS03		Local	18.0	0.131	10	\$0	11	3
C88-T072R28S23-RS05		Local	18.0	0.373	10	\$0	11	3
C88-T072R31S11-RS04		Local	32.0	0.143	10	\$0	10	3
Totals				1.778		\$0		

89 Van Buren

RdID	Rout	SysClass	Width	Length	AADT	UpgradeCost	LOS00	LOSopt
C89-T068R10S29-RS03		Local	18.0	0.249	30	\$0	11	5
C89-T068R10S28-RS01		Local	18.0	0.528	30	\$0	11	5
C89-T068R10S21-RS06		Local	18.0	0.087	20	\$0	11	5
C89-T068R10S21-RS04		Local	18.0	0.441	25	\$0	11	5
C89-T068R09S06-RS04		Local	22.0	0.087	10	\$0	10	3
C89-T068R10S01-RS04		Local	24.0	0.298	10	\$0	10	3
Totals				1.690		\$0		

Table 13d : Printout of road segments that warrant Downgrade

90 Wapello

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C90-T073R14S35-RS09		Local	20.0	0.242	10	\$0	10	3
		Totals		0.242		\$0		

91 Warren

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C91-T077R24S05-RS10	R57	FM-FAS+	32.0	0.125	270	\$0	14	8
C91-T077R24S05-RS16	R57	FM-FAS	52.0	0.054	270	\$0	14	8
C91-T074R22S06-RS01		Local	22.0	0.050	20	\$0	11	5
C91-T077R24S01-RS05		Local	20.0	0.958	30	\$0	11	5
C91-T077R24S05-RS12	R57	FM-FAS+	32.0	0.062	270	\$0	14	8
C91-T074R23S22-RS08		Local	24.0	0.019	10	\$0	10	3
C91-T077R24S01-RS03		Local	30.0	0.074	30	\$0	12	5
C91-T077R24S05-RS14	R57	FM-FAS+	52.0	0.052	270	\$0	14	8
C91-T074R23S15-RS04		Local	24.0	0.030	10	\$0	10	3
C91-T075R24S12-RS04		Local	18.0	0.143	10	\$0	10	3
C91-T077R24S05-RS18	R57	FM-FAS	32.0	0.060	270	\$0	14	8
C91-T077R22S26-RS05		Local	24.0	0.261	25	\$0	11	5
C91-T077R23S06-RS09		Local	20.0	0.105	30	\$0	11	5
C91-T077R24S03-RS32		Local	27.0	0.050	20	\$0	11	5
C91-T077R24S03-RS56		Local	27.0	0.031	20	\$0	11	5
C91-T077R24S03-RS66		Local	27.0	0.019	20	\$0	11	5
C91-T077R24S03-RS33		Local	27.0	0.031	15	\$0	11	5
C91-T077R24S03-RS83		Local	27.0	0.031	15	\$0	11	5
C91-T077R22S26-RS07		Local	24.0	0.062	25	\$0	11	5
C91-T075R24S13-RS06		Local	18.0	0.292	10	\$0	10	3
C91-T075R23S06-RS04		Local	18.0	0.249	25	\$0	11	5
		Totals		2.758		\$0		

92 Washington

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C92-T074R06S03-RS05		Local	24.0	0.022	30	\$0	11	5
		Totals		0.022		\$0		

93 Wayne

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C93-T069R20S19-RS05		Local	18.0	0.479	30	\$0	11	5
C93-T069R20S30-RS03		Local	18.0	0.360	30	\$0	11	5
		Totals		0.839		\$0		

94 Webster

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C94-T087R27S02-RS04		FM	22.0	0.610	10	\$0	10	3
C94-T088R27S35-RS04		FM	22.0	0.198	10	\$0	10	3
C94-T088R27S34-RS03		Local	22.0	1.033	10	\$0	10	3
C94-T088R27S33-RS03		Local	22.0	0.261	10	\$0	10	3
C94-T088R29S03-RS07		Local	22.0	0.099	10	\$0	10	3
C94-T088R28S17-RS05		Local	31.0	0.329	30	\$0	11	5
C94-T090R30S36-RS03		FM	22.0	0.019	15	\$0	11	5
C94-T088R28S17-RS08		Local	31.0	0.031	10	\$0	11	3
C94-T088R28S17-RS09		Local	30.0	0.162	30	\$0	11	5
C94-T088R27S33-RS04		Local	22.0	0.419	10	\$0	10	3
C94-T087R27S02-RS02		FM	22.0	0.265	10	\$0	10	3
C94-T087R27S03-RS04		FM	22.0	0.215	10	\$0	10	3
C94-T088R29S03-RS08		Local	22.0	0.180	10	\$0	10	3
C94-T088R27S33-RS01		Local	22.0	0.547	10	\$0	10	3
C94-T088R27S33-RS06		Local	22.0	0.427	10	\$0	10	3
		Totals		4.795		\$0		

96 Winneshiek

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C96-T098R08S25-RS12		Local	30.0	0.195	10	\$0	10	3
C96-T097R09S26-RS04		Local	22.0	0.248	30	\$0	11	5
C96-T098R10S24-RS10		Local	30.0	0.040	10	\$0	10	3
C96-T098R10S24-RS12		Local	30.0	0.279	10	\$0	10	3
C96-T098R08S25-RS07		Local	30.0	0.045	10	\$0	10	3
C96-T098R10S24-RS08		Local	30.0	0.031	10	\$0	10	3
C96-T098R08S25-RS03		Local	30.0	0.063	10	\$0	10	3
C96-T098R08S25-RS08		Local	30.0	0.060	10	\$0	10	3
C96-T098R08S25-RS05		Local	30.0	0.080	10	\$0	10	3
C96-T098R08S25-RS10		Local	30.0	0.170	10	\$0	10	3
		Totals		1.211		\$0		

97 Woodbury

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C97-T087R47S33-RS09		Local	31.0	0.087	35	\$0	11	5
C97-T089R46S06-RS06		Local	30.0	0.161	10	\$0	11	3
C97-T088R47S23-RS02		Local	22.0	0.099	10	\$0	11	3
C97-T088R47S03-RS03		Local	31.0	0.416	10	\$0	11	3
		Totals		0.763		\$0		

99 Wright

RdID:	Rout	SysClass:	Width:	Length:	AADT:	UpgradeCost:	LOS00:	LOSopt:
C99-T090R26S20-RS06		Local	24.0	0.317	25	\$0	11	5
		Totals		0.317		\$0		