

Table B.1 - Highway Systems on Major Roads in Metcalfe County

State Primary System	National Truck Network (NN)	National Highway System (NHS)	Functional Classification	Truck Weight Class	Appalachian Development Highway System	Bike Route	Coal Haul (annual tons)	Extended Weight System	Forest Highway System	Scenic Byway System
US 68: MP 3.855 to MP 13.013 from Cave Ridge to KY 544										
State Secondary	No	No	Rural Major Collector	AAA	No	No	None	No	No	Yes
KY 80: MP 0.000 to MP 3.205 from US 68 to Owen Jack Road										
State Secondary	No	No	Rural Minor Arterial	AAA	No	No	None	No	No	Yes
KY 90: MP 1.623 to MP 6.468 from Hilltop View Road to Martin Cemetery Road										
State Primary	No	No	Rural Minor Arterial	AAA	No	No	None	No	No	No
KY 163: MP 0.000 to MP 11.489 from Monroe County Line to US 68										
State Secondary	No	No	Rural Major Collector	AAA	No	No	None	No	No	Yes
Louie B. Nunn (Cumberland) Parkway (LN 9008): MP 24.092 to MP 34.402 from KY 640 Overpass to Jack Sparks Road Overpass										
State Primary	Yes	Yes	Rural Principal Arterial	AAA	No	No	None	No	No	No

Table B.2 - Metcalfe County State Road Geometric Characteristics

Begin MP	End MP	Length (miles)	Number of Lanes	Lane Width (feet)	Shoulder Width (feet)	Shoulder Type	% Passing Sight Distance	Speed Limit (mph)	Roadway Type	Terrain Type	Pavement Type
US 68: MP 3.855 to MP 13.013											
3.855	5.428	1.573	2	12	10	Stabilize	62	55	Undivided Highway	Rolling	High Flexible
5.428	6.208	0.780	2	12	10	Stabilize	11	55	Undivided Highway	Rolling	High Flexible
6.208	7.697	1.489	2	11	6	Combination	85	45	Undivided Highway	Rolling	High Flexible
7.697	8.562	0.865	4	9	6	Combination	100	35-45	Undivided Highway	Rolling	High Flexible
8.562	9.002	0.440	2	12	6	Combination	0	25-45	Undivided Highway	Rolling	High Flexible
9.002	9.633	0.631	2	10	6	Combination	0	55	Undivided Highway	Rolling	High Flexible
9.633	9.997	0.364	2	12	6	Combination	0	55	Undivided Highway	Rolling	High Flexible
9.997	10.458	0.461	2	12	6	Combination	40	55	Undivided Highway	Rolling	High Flexible
10.458	13.013	2.555	2	9	6	Combination	44	55	Undivided Highway	Rolling	High Flexible
KY 80: MP 0.000 to MP 3.205											
0.000	3.205	3.205	2	9	2	Combination	15	45-55	Undivided Highway		High Flexible
KY 90: MP 1.623 to MP 6.468											
1.623	2.710	1.087	2	9	2	Combination	100	35-55	Undivided Highway	Rolling	High Flexible
2.710	3.350	0.640	3	9	2	Combination	100	35-55	Undivided Highway	Rolling	High Flexible
3.350	4.450	1.100	2	9	2	Combination	82	55	Undivided Highway	Rolling	High Flexible
4.450	4.850	0.400	2	10	2	Combination	57	55	Divided Highway	Rolling	High Flexible
4.850	6.468	1.618	2	10	2	Combination	35	55	Undivided Highway	Rolling	High Flexible
KY 163: MP 0.000 to MP 11.489											
0.000	2.251	2.251	2	11	2	Combination	9	55	Undivided Highway	Rolling	High Flexible
2.251	3.223	0.972	2	11	2	Combination	51	55	Undivided Highway	Rolling	High Flexible
3.223	9.084	5.861	2	9	2	Combination	43	45	Undivided Highway	Rolling	High Flexible
9.084	11.131	2.047	2	9	2	Combination	0	45	Undivided Highway	Rolling	High Flexible
11.131	11.427	0.296	2	9	2	Combination	0	25-35	Undivided Highway	Rolling	High Flexible
11.427	11.489	0.062	2	10	2	Combination	0	25	Undivided Highway	Rolling	High Flexible
Louie B. Nunn (Cumberland) Parkway (LN 9008): MP 24.092 to MP 34.402											
24.092	34.402	10.310	4	12	10	Paved	100	65	Divided Highway	Rolling	High Flexible

Table B.3 - Geometric Deficiencies along Key Routes

US 68 (MP 8.6 to MP 9.0) - Geometric Deficiencies			
Mile Point	Criteria	Requirement (1)	As Built (3)
8.6	Min Stopping Sight Distance (ft)	570	292
8.6	Max Grade (%)	6.000	-7.100
8.8	Min Radius (ft)	1205	955
8.8	Min Headlight Sight Distance (ft)	570	197
9.0	Min Headlight Sight Distance (ft)	570	468
9.0	Min Headlight Sight Distance (ft)	570	296
9.0	Max Grade (%)	6.000	6.720

KY 163 (MP 3.2 to MP 11.2) - Geometric Deficiencies			
Mile Point	Criteria	Requirement (1)	As Built (2)
3.3	Min Stopping Sight Distance (ft)	570	420
3.3	Max Grade (%)	7.000	-7.800
3.4	Min Headlight Sight Distance (ft)	570	359
3.5	Min Stopping Sight Distance (ft)	570	293
3.6	Min Stopping Sight Distance (ft)	570	294
3.6	Max Grade (%)	6.000	8.000
3.7	Min Radius (ft)	1205	716.78
3.8	Min Headlight Sight Distance (ft)	570	260
3.9	Min Headlight Sight Distance (ft)	570	422
4.0	Min Stopping Sight Distance (ft)	570	356
4.1	Min Headlight Sight Distance (ft)	570	308
4.4	Min Radius (ft)	1205	955.6
4.5	Min Headlight Sight Distance (ft)	570	198
4.5	Min Stopping Sight Distance (ft)	570	292
4.7	Min Stopping Sight Distance (ft)	570	295
4.7	Max Grade (%)	7.000	8.000
4.8	Min Headlight Sight Distance (ft)	570	161
4.8	Min Stopping Sight Distance (ft)	570	308
4.9	Min Headlight Sight Distance (ft)	570	231
5.0	Min Stopping Sight Distance (ft)	570	285
5.0	Max Grade (%)	7.000	7.500
5.1	Min Headlight Sight Distance (ft)	570	239
5.2	Min Headlight Sight Distance (ft)	570	356
5.3	Min Stopping Sight Distance (ft)	570	292
5.5	Min Headlight Sight Distance (ft)	570	326
5.8	Min Stopping Sight Distance (ft)	570	318
5.8	Max Grade (%)	7.000	7.647
5.8	Min Radius (ft)	1205	817.6
5.9	Min Radius (ft)	1205	716.3
5.9	Min Headlight Sight Distance (ft)	570	212
6.2	Min Stopping Sight Distance (ft)	570	301
6.2	Max Grade (%)	7.000	7.857
6.2	Min Radius (ft)	1205	716.3
6.3	Min Headlight Sight Distance (ft)	570	360
6.4	Min Stopping Sight Distance (ft)	570	551
6.5	Max Grade (%)	7.000	7.333
6.7	Min Headlight Sight Distance (ft)	570	247

(continued)

Table B.3 - Geometric Deficiencies along Key Routes (continued)

Mile Point	Criteria	Requirement (1)	As Built (2)
6.7	Min Headlight Sight Distance (ft)	570	438
6.8	Min Stopping Sight Distance (ft)	570	338
6.9	Min Headlight Sight Distance (ft)	570	337
7.1	Min Headlight Sight Distance (ft)	570	327
7.5	Min Headlight Sight Distance (ft)	570	185
7.6	Min Stopping Sight Distance (ft)	570	400
7.6	Min Headlight Sight Distance (ft)	570	211
7.9	Min Stopping Sight Distance (ft)	570	184
7.9	Max Grade (%)	6.000	7.000
8.1	Min Headlight Sight Distance (ft)	570	246
8.4	Min Stopping Sight Distance (ft)	570	329
8.4	Max Grade (%)	7.000	7.740
8.5	Min Headlight Sight Distance (ft)	570	313
8.5	Min Headlight Sight Distance (ft)	570	203
8.9	Min Stopping Sight Distance (ft)	570	427
9.1	Min Radius (ft)	1205	955.4
9.1	Min Headlight Sight Distance (ft)	570	215
9.1	Max Grade (%)	7.000	-8.000
9.2	Min Stopping Sight Distance (ft)	570	300
9.3	Min Stopping Sight Distance (ft)	570	446
9.4	Min Radius (ft)	1205	955.4
9.5	Min Headlight Sight Distance (ft)	570	211
9.6	Min Stopping Sight Distance (ft)	570	297
9.7	Min Headlight Sight Distance (ft)	570	211
9.7	Min Stopping Sight Distance (ft)	570	319
9.8	Min Headlight Sight Distance (ft)	570	107
9.9	Min Stopping Sight Distance (ft)	570	240
9.9	Max Grade (%)	7.000	8.000
9.9	Min Headlight Sight Distance (ft)	570	129
10.1	Min Stopping Sight Distance (ft)	570	392
10.2	Min Stopping Sight Distance (ft)	570	365
10.2	Min Headlight Sight Distance (ft)	570	142
10.3	Min Stopping Sight Distance (ft)	570	245
10.3	Max Grade (%)	7.000	8.000
10.4	Min Headlight Sight Distance (ft)	570	127
10.4	Min Stopping Sight Distance (ft)	570	362
10.5	Min Headlight Sight Distance (ft)	570	259
10.7	Min Headlight Sight Distance (ft)	570	206
10.9	Min Stopping Sight Distance (ft)	570	319
11.0	Min Headlight Sight Distance (ft)	570	215
11.0	Min Stopping Sight Distance (ft)	570	330
11.2	Min Headlight Sight Distance (ft)	570	188

(1) Stopping Sight Distance, Headlight Sight Distance, Radius and Grade Requirements come from the January 2006 KYTC Highway Design Manual - Exhibit 700-02.

Note: Maximum Grade = 6% except where grade segments are less than 500 feet.

If grade segments are less than 500 feet the Maximum Grade = 7%.

(2) Existing geometric information came from "As Built" plan sets SP 149 A-G and SP 149 B-G.

(3) Existing geometric information came from the "As Built" plan set SP 85-24.

KY 163 Alternatives Study

Table B.4 - Traffic Characteristics within Study Area

Route	Begin MP	End MP	Length (miles)	No. Lanes	Lane Width (feet)	Shoulder Width (feet)	Speed Limit (mph)	Roadway Type	Functional Class	K-Factor	2006 ADT	Percent Trucks	Free Flow Speed	% No Passing	Access Pts / Mile	2030 ADT	2006 LOS ¹	2030 LOS ¹
KY 163	0.000	0.921	0.921	2	11	2	55	Undivided	Rural Major Collector	12%	2780	15%	60	91	5	4,370	C	C
KY 163	0.921	3.223	2.302	2	11	2	55	Undivided	Rural Major Collector	12%	3500	13%	60	49	5	5,500	B	C
KY 163	3.233	9.084	5.851	2	9	2	55	Undivided	Rural Major Collector	12%	2090	12%	60	57	10	3,280	B	B
KY 163	9.084	11.090	2.006	2	9	2	45	Undivided	Rural Major Collector	12%	2920	10%	50	100	20	4,590	C	C
KY 163	11.090	11.489	0.399	2	9	2	25	Undivided	Rural Major Collector	12%	4130	9%	30	100	20	6,490	B ²	D ²
KY 80	0.000	2.683	2.683	2	9	2	45	Undivided	Rural Minor Arterial	14%	1850	4%	50	85	10	2,910	B	C
KY 80	2.683	3.205	0.522	2	9	2	55	Undivided	Rural Minor Arterial	14%	1060	5%	60	85	5	1,670	B	B
KY 90	1.623	2.710	1.087	2	9	2	45	Undivided	Rural Minor Arterial	10%	4880	18%	50	0	15	7,670	B	C
KY 90	2.710	3.350	0.640	3	9	2	45	Undivided	Rural Minor Arterial	10%	4880	18%	50	0	15	7,670	A	A
KY 90	3.350	4.450	1.100	2	9	2	55	Undivided	Rural Minor Arterial	10%	4880	18%	60	18	5	7,670	B	C
KY 90	4.450	4.850	0.400	2	10	2	55	Undivided	Rural Minor Arterial	10%	3310	17%	60	43	5	5,200	B	C
KY 90	4.850	5.554	0.704	2	10	2	55	Undivided	Rural Minor Arterial	10%	3310	17%	60	65	5	5,200	C	C
KY 90	5.554	6.468	0.914	2	10	2	55	Undivided	Rural Minor Arterial	10%	2680	7%	60	65	5	4,210	B	C
Nunn	24.092	27.400	3.308	4	12	10	65	Divided	Rural Principal Arterial	10%	6250	27%	70	0	<1	9,820	A ³	A ³
Nunn	27.400	34.402	7.002	4	12	10	65	Divided	Rural Principal Arterial	10%	4250	27%	70	0	<1	6,680	A ³	A ³
US 68	3.855	5.421	1.566	2	12	10	55	Undivided	Rural Major Collector	11%	2140	5%	60	38	5	3,360	B	B
US 68	5.421	6.240	0.819	2	12	10	55	Undivided	Rural Major Collector	11%	5890	11%	60	89	5	9,250	C	D
US 68	6.240	7.186	0.946	2	11	6	45	Undivided	Rural Major Collector	11%	6830	10%	50	15	10	10,730	B ⁴	B ⁴
US 68	7.186	7.697	0.511	2	11	6	45	Undivided	Rural Major Collector	11%	10300	8%	50	15	10	16,180	B ⁴	C ⁴
US 68	7.697	8.562	0.865	4	9	6	35	Undivided	Rural Major Collector	11%	10300	8%	50	0	40	16,180	B ²	F ²
US 68	8.562	9.002	0.440	2	12	6	35	Undivided	Rural Major Collector	11%	7800	9%	40	100	20	12,250	B ⁴	C ⁴
US 68	9.002	10.350	1.348	2	10	6	55	Undivided	Rural Major Collector	11%	3650	11%	60	100	15	5,730	C	C
US 68	10.350	13.013	2.663	2	9	6	55	Undivided	Rural Major Collector	11%	2200	7%	60	52	5	3,460	B	C

¹ Sections represented as Class II Two Lane Highway with 60/40 directional split unless otherwise noted

² Portions controlled by adjacent stop; analyzed as unsignalized intersection

³ Parkway analyzed as HCS Freeway with 55/45 split

⁴ Procedure for two lane developed roadways taken from NCHRP Report 20-7(160)

Table B.5 - Adequacy Ratings for Major Routes in Study Area

Begin MP	End MP	Section Length (miles)	Composite Adequacy Rating	Composite Adequacy Percentile	Safety Component	Maximum Possible Safety Component	Service Component	Maximum Possible Service Component	Condition Component	Maximum Possible Condition Component
US 68: MP 3.855 to MP 13.013										
3.855	5.428	1.573	95.0	94.87	50.0	55.0	15.0	15.0	30.0	30.0
5.428	6.100	0.672	100.0	100.00	55.0	55.0	15.0	15.0	30.0	30.0
6.100	7.310	1.210	80.0	72.99	41.0	55.0	15.0	15.0	24.0	30.0
7.310	7.697	0.387	64.5	40.26	27.0	55.0	15.0	15.0	22.5	30.0
7.697	7.800	0.103	43.0	3.89	10.0	55.0	15.0	15.0	18.0	30.0
7.800	8.562	0.762	46.5	10.39	9.0	55.0	15.0	15.0	22.5	30.0
8.562	8.670	0.108	66.0	42.55	21.0	55.0	15.0	15.0	30.0	30.0
8.670	9.002	0.332	64.5	40.26	27.0	55.0	13.5	15.0	24.0	30.0
9.002	9.997	0.995	53.9	24.56	8.9	55.0	15.0	15.0	30.0	30.0
9.997	10.350	0.353	95.0	94.87	50.0	55.0	15.0	15.0	30.0	30.0
10.350	13.013	2.663	77.0	64.99	38.0	55.0	15.0	15.0	24.0	30.0
KY 80: MP 0.000 to MP 3.205										
0.000	0.967	0.967	78.5	68.04	39.5	55.0	15.0	15.0	24.0	30.0
0.967	2.683	1.716	84.5	85.68	39.5	55.0	15.0	15.0	30.0	30.0
2.683	3.205	0.522	73.5	58.15	34.5	55.0	15.0	15.0	24.0	30.0
KY 90: MP 1.623 to MP 6.468										
1.623	1.800	0.177	81.8	67.45	31.8	45.0	20.0	25.0	30.0	30.0
1.800	2.650	0.850	58.8	22.07	8.8	45.0	20.0	25.0	30.0	30.0
2.650	2.700	0.050	58.8	22.07	8.8	45.0	20.0	25.0	30.0	30.0
2.700	3.350	0.650	62.0	28.65	12.0	45.0	20.0	25.0	30.0	30.0
3.350	4.450	1.100	85.0	74.56	35.0	45.0	20.0	25.0	30.0	30.0
4.450	4.721	0.271	82.8	71.03	32.8	45.0	20.0	25.0	30.0	30.0
4.721	4.850	0.129	82.8	71.03	32.8	45.0	20.0	25.0	30.0	30.0
4.850	5.300	0.450	82.8	71.03	32.8	45.0	20.0	25.0	30.0	30.0
5.300	5.554	0.254	77.3	58.38	27.3	45.0	20.0	25.0	30.0	30.0
5.554	5.600	0.046	72.8	46.00	22.8	45.0	20.0	25.0	30.0	30.0
5.600	6.468	0.868	77.3	58.38	27.3	45.0	20.0	25.0	30.0	30.0
KY 163: MP 0.000 to MP 11.489										
0.000	2.251	2.251	80.5	74.00	41.5	55.0	15.0	15.0	24.0	30.0
2.251	3.223	0.972	90.5	93.07	51.5	55.0	15.0	15.0	24.0	30.0
3.223	4.518	1.295	84.5	85.68	39.5	55.0	15.0	15.0	30.0	30.0
4.518	7.100	2.582	84.5	85.68	39.5	55.0	15.0	15.0	30.0	30.0
7.100	9.084	1.984	84.5	85.68	39.5	55.0	15.0	15.0	30.0	30.0
9.084	9.500	0.416	84.5	85.68	39.5	55.0	15.0	15.0	30.0	30.0
9.500	10.530	1.030	78.5	68.04	39.5	55.0	15.0	15.0	24.0	30.0
10.530	11.090	0.560	84.5	85.68	39.5	55.0	15.0	15.0	30.0	30.0
11.090	11.419	0.329	72.5	54.51	39.5	55.0	15.0	15.0	18.0	30.0
11.419	11.489	0.070	65.9	41.97	41.9	55.0	15.0	15.0	9.0	30.0
Louie B. Nunn (Cumberland) Parkway (LN 9008): MP 24.092 to MP 34.402										
24.092	27.400	5.043	100.0	100.00	35.0	35.0	30.0	30.0	35.0	35.0
27.400	34.402	8.759	83.0	37.63	18.0	35.0	30.0	30.0	35.0	35.0