

## Appendix C

### Capacity Calculations

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#### Supporting Assumptions:

- Terrain, Shoulder Widths, and Lane Widths come from HIS
- ADT Volumes and Truck Percentages come from KYTC's CTS program. Where Truck Percent are not available, assumption is 6%.
- Directional Volumes were calculated from the ADT using K and D Factors from KYTC *2008 Traffic Forecasting Report* based on Functional Classification.
- Default values for PHF, Percent No-Passing Zones, and Access-Point Density.
- Assumed 0% for Recreational Vehicles.
- Class of Highway changed based on location; always a Class I or Class III.
- Base Free-Flow Speed = Posted Speed Limit + 10 mph

*Note: Turning movement counts were not collected as part of this study. Thus the LOS at intersections could not be evaluated. In addition, there is not enough data to properly evaluate the one-way couplet running through downtown Princeton or the one-way loop around the Courthouse Square. Thus LOS and V/C analysis was not conducted for these roadway segments.*

ROUTE	BEGIN MP	END MP	Segment Length	Speed Limit	Terrain	ADT	% Trucks	Driving Lanes	Lane Width	Shoulder Width	Median Type	LOS	V/C
017-US-0062 -000	3.1	3.644	0.544	55 mph	Flat	4096 (2010)	7%	2	12 ft	10 ft (CR & NR)	None	C	0.18
017-US-0062 -000	3.644	4.275	0.631	55 mph	Rolling	4535(2011)	7%	2	12 ft	10 ft (CR & NR)	None	C	0.28
017-US-0062 -000	4.275	5.21	0.935	55 mph	Rolling	8803 (2012)	7%	2	12 ft	10 ft (CR & NR)	None	D	0.38
017-US-0062 -000	5.21	5.31	0.1	45 mph	Rolling	8803 (2012)	7%	2	12 ft	10 ft (CR & NR)	None	C	0.36
017-US-0062 -000	5.31	5.931	0.621	35 mph	Rolling	8803 (2012)	7%	2-4	12 ft	10 ft (CR & NR)	Raised Not	C	0.38
017-US-0062 -000	5.931	6.54	0.609	35 mph	Flat	13104 (2010)	12%	2	12 - 15 ft	0 - 2 ft (CL, NL, CR & NR)	None	D	0.47
017-US-0062 -000	6.54	6.664	0.124	25 mph	Flat	13104 (2010)	12%	2	15 ft	0 ft	None	Unknown	Unknown
017-US-0062 -000	6.664	7.037	0.373	25 mph	Flat	5434 (2011)	12%	2	14 - 15 ft	0 ft	None	Unknown	Unknown
017-US-0062 -000	7.037	7.1	0.063	25 mph	Flat	4100 (2012)	12%	2	14 ft	0 ft	None	B	0.16
017-US-0062 -000	7.1	7.345	0.245	35 mph	Flat	4100 (2012)	12%	2	14 ft	0 ft	None	B	0.16
017-US-0062 -000	7.345	7.525	0.18	35 mph	Rolling	495 (2010)	12%	2	10 ft	2 ft (NR & CR)	None	A	0.06
017-US-0062 -000	7.525	8.14	0.615	35 mph	Rolling	3106 (2011)	14%	2	10 ft	2 - 4 ft (NR & CR)	None	B	0.26
017-US-0062 -000	8.14	8.25	0.11	45 mph	Rolling	3106 (2011)	14%	2	10 ft	4 ft (NR & CR)	None	B	0.27
017-US-0062 -000	8.25	8.58	0.33	45 mph	Rolling	2052 (2012)	14%	2	10 ft	4 ft (NR & CR)	None	B	0.19
017-US-0062 -000	8.58	8.793	0.213	55 mph	Rolling	2052 (2012)	14%	2	10 ft	4 ft (NR & CR)	None	B	0.22
017-US-0062 -000	8.793	9.334	0.541	55 mph	Rolling	1854 (2010)	14%	2	10 ft	4 ft (NR & CR)	None	B	0.23
017-US-0062 -000	9.334	9.8	0.466	55 mph	Rolling	1854 (2010)	14%	2	10 ft	4 ft (NR & CR)	None	B	0.23

ROUTE	BEGIN MP	END MP	Segment Length	Speed Limit	Terrain	ADT	% Trucks	Driving Lanes	Lane Width	Shoulder Width	Median Type	LOS	V/C
017-US-0062 -001	6.664	6.72	0.056	25 mph	Flat	5715 (2012)	12%	1	15 ft	4 ft (NL & NR)	None	Unknown	Unknown
017-US-0062 -001	6.72	6.895	0.175	25 mph	Flat	5715 (2012)	12%	2	15 ft	4 ft (NL & NR)	None	Unknown	Unknown
017-US-0062 -001	6.895	6.97	0.075	25 mph	Flat	5715 (2012)	12%	2	13 ft	4 ft (NL & NR)	None	Unknown	Unknown

ROUTE	BEGIN MP	END MP	Segment Length	Speed Limit	Terrain	ADT	% Trucks	Driving Lanes	Lane Width	Shoulder Width	Median Type	LOS	V/C
017-KY-0091 -000	8.4	8.911	0.511	55 mph	Rolling	1284 (2010)	10%	2	10 ft	8 ft (CR & NR)	None	B	0.16
017-KY-0091 -000	8.911	9.602	0.691	55 mph	Rolling	2240(2012)	10%	2	10 ft	8 ft (CR & NR)	None	C	0.23
017-KY-0091 -000	9.602	10.78	1.178	55 mph	Rolling	3755 (2011)	19%	2	10 ft	8 ft (CR & NR)	None	C	0.32
017-KY-0091 -000	10.78	11.21	0.43	45 mph	Rolling	3755 (2011)	19%	2	10 ft	8 ft (CR & NR)	None	B	0.32
017-KY-0091 -000	11.21	11.32	0.11	35 mph	Flat	3755 (2011)	19%	2	10 - 14 ft	0 - 8 ft (CR & NR )	None	B	0.16
017-KY-0091 -000	11.32	11.57	0.25	35 mph	Flat	4653 (2010)	19%	2	14 ft	0 ft	None	B	0.19
017-KY-0091 -000	11.57	11.707	0.137	25 mph	Flat	4653 (2010)	19%	2	14 ft	0 ft	None	B	0.19
017-KY-0091 -000	11.707	11.849	0.142	25 mph	Flat	3192 (2012)	9%	2	12 - 21 ft	0 ft	None	Unknown	Unknown
017-KY-0091 -000	11.849	11.89	0.041	35 mph	Rolling	9960(2011)	9%	2	13 ft	1 ft (NL)	Raised Not	D	0.43
017-KY-0091 -000	11.89	11.93	0.04	35 mph	Rolling	9960(2011)	9%	2	13 ft	2 ft (NR)	None	C	0.43
017-KY-0091 -000	11.93	12.322	0.392	45 mph	Rolling	9960(2011)	9%	2	12 - 13 ft	2 - 8 ft (CR & NR)	None	C	0.43
017-KY-0091 -000	12.322	12.94	0.618	45 mph	Rolling	7236 (2010)	9%	2	12 ft	8 ft (CR & NR)	None	C	0.35
017-KY-0091 -000	12.94	13.117	0.177	55 mph	Rolling	7236 (2010)	9%	2	12 ft	8 ft (CR)	None	D	0.35
017-KY-0091 -000	13.117	13.379	0.262	55 mph	Rolling	4509(2012)	9%	2	12 ft	8 ft (CR & NR)	None	C	0.3
017-KY-0091 -000	13.379	13.4	0.021	55 mph	Rolling	4509(2012)	9%	2	12 ft	8 ft (CR & NR)	None	C	0.3

ROUTE	BEGIN MP	END MP	Segment Length	Speed Limit	Terrain	ADT	% Trucks	Driving Lanes	Lane Width	Shoulder Width	Median Type	LOS	V/C
017-KY-0091 -001	11.707	11.855	0.148	25 mph	Rolling	3514 (2011)	24%	2	11 ft	2 ft (NL & NR)	None	Unknown	Unknown

ROUTE	BEGIN MP	END MP	Segment Length	Speed Limit	Terrain	ADT	% Trucks	Driving Lanes	Lane Width	Shoulder Width	Median Type	LOS	V/C
017-KY-0139 -000	8.3	9.65	1.35	55 mph	Rolling	1982 (2010)	21%	2	10 ft	4 ft (CR & NR)	None	B	0.25
017-KY-0139 -000	9.65	10.871	1.221	55 mph	Rolling	2439 (2011)	21%	2	10 ft	4 ft (CR & NR)	None	C	0.29
017-KY-0139 -000	10.871	11.347	0.476	35 mph	Rolling	2514 (2010)	21%	2	10 ft	4 ft (CR & NR)	None	B	0.28
017-KY-0139 -000	11.347	11.67	0.323	25 mph	Rolling	5999 (2011)	21%	2	15 ft	4 ft (CR & NR)	None	C	0.4
017-KY-0139 -000	11.67	11.7	0.03	55 mph	Rolling	1666 (2012)	8%	2	10 ft	4 ft (CR & NR)	None	B	0.39

ROUTE	BEGIN MP	END MP	Segment Length	Speed Limit	Terrain	ADT	% Trucks	Driving Lanes	Lane Width	Shoulder Width	Median Type	LOS	V/C
017-KY-0139 -001	11.67	11.702	0.032	55 mph	Flat	2880 (2010)	8%	2	18 ft	0 ft	None	Unknown	Unknown

ROUTE	BEGIN MP	END MP	Segment Length	Speed Limit	Terrain	ADT	% Trucks	Driving Lanes	Lane Width	Shoulder Width	Median Type	LOS	V/C
017-KY-0128 -000	5	5.213	0.213	55 mph	Rolling	332 (2011)	Unknown	2	9 ft	3 ft (CR & NR)	None	A	0.04
017-KY-0128 -000	5.213	6.665	1.452	55 mph	Rolling	514 (2011)	Unknown	2	9 ft	3 ft (CR & NR)	None	A	0.07

ROUTE	BEGIN MP	END MP	Segment Length	Speed Limit	Terrain	ADT	% Trucks	Driving Lanes	Lane Width	Shoulder Width	Median Type	LOS	V/C
017-KY-0278 -000	0	0.49	0.49	35 mph	Rolling	545 (2010)	Unknown	2	8 ft	3 ft (CR & NR)	None	A	0.05
017-KY-0278 -000	0.49	0.99	0.5	55 mph	Rolling	545 (2010)	Unknown	2	8 ft	3 ft (CR & NR)	None	A	0.05
017-KY-0278 -000	0.99	1.812	0.822	55 mph	Rolling	545 (2010)	Unknown	2	8 ft	3 ft (CR & NR)	None	A	0.06
017-KY-0278 -000	1.812	2.3	0.488	55 mph	Rolling	295 (2012)	Unknown	2	8 ft	3 ft (CR & NR)	None	A	0.03

ROUTE	BEGIN MP	END MP	Segment Length	Speed Limit	Terrain	ADT	% Trucks	Driving Lanes	Lane Width	Shoulder Width	Median Type	LOS	V/C
017-KY-0293 -000	3.5	3.913	0.413	55 mph	Rolling	1748 (2011)	5%	2	9 ft	6 ft (CR & NR)	None	B	0.18
017-KY-0293 -000	3.913	5.26	1.347	55 mph	Rolling	2937 (2010)	5%	2	9 ft	6 ft (CR & NR)	None	C	0.22
017-KY-0293 -000	5.26	5.274	0.014	45 mph	Rolling	2937 (2010)	5%	2	9 ft	6 ft (CR & NR)	None	C	0.22
017-KY-0293 -000	5.274	5.59	0.316	45 mph	Rolling	3715 (2012)	5%	2	9 ft	6 ft (CR & NR)	None	B	0.24
017-KY-0293 -000	5.59	6.151	0.561	35 mph	Flat	3715 (2012)	5%	2	9 - 15 ft	0 - 6 ft (CR & NR)	None	B	0.14
017-KY-0293 -000	6.151	6.95	0.799	35 mph	Rolling	2890 (2010)	7%	2	9 - 15 ft	2 - 4 ft (CR & NR)	None	B	0.2
017-KY-0293 -000	6.95	7.37	0.42	45 mph	Rolling	2890 (2010)	7%	2	9 ft	4 ft (CR & NR)	None	B	0.2
017-KY-0293 -000	7.37	7.564	0.194	55 mph	Rolling	2890 (2010)	7%	2	9 ft	4 ft (CR & NR)	None	C	0.22
017-KY-0293 -000	7.564	7.753	0.189	55 mph	Rolling	1861 (2011)	6%	2	9 ft	4 ft (CR & NR)	None	B	0.17
017-KY-0293 -000	7.753	7.8	0.047	55 mph	Rolling	1861 (2011)	6%	2	9 ft	4 ft (CR & NR)	None	B	0.17

ROUTE	BEGIN MP	END MP	Segment Length	Speed Limit	Terrain	ADT	% Trucks	Driving Lanes	Lane Width	Shoulder Width	Median Type	LOS	V/C
017-KY-1495 -000	2.9	5.366	2.466	55 mph	Rolling	326 (2011)	Unknown	2	8 ft	3 ft (CR & NR)	None	A	0.03
017-KY-1495 -000	5.366	5.517	0.151	55 mph	Rolling	326 (2011)	Unknown	2	8 ft	3 ft (CR & NR)	None	A	0.03

ROUTE	BEGIN MP	END MP	Segment Length	Speed Limit	Terrain	ADT	% Trucks	Driving Lanes	Lane Width	Shoulder Width	Median Type	LOS	V/C
017-KY-2080 -000	0	0.24	0.24	35 mph	Rolling	963 (2011)	20%	2	10 ft	2 ft (CR & NR)	None	A	0.15
017-KY-2080 -000	0.24	0.5	0.26	35 mph	Rolling	1949 (2011)	20%	2	11 ft	0 ft	None	B	0.26

ROUTE	BEGIN MP	END MP	Segment Length	Speed Limit	Terrain	ADT	% Trucks	Driving Lanes	Lane Width	Shoulder Width	Median Type	LOS	V/C
017-KY-2617 -000	0	0.281	0.281	35 mph	Rolling	1676 (2011)	Unknown	2	10 ft	3 ft (CR & NR)	None	B	0.16
017-KY-2617 -000	0.281	0.7	0.419	35 mph	Rolling	766 (2011)	Unknown	2	10 ft	3 ft (CR & NR)	None	A	0.07

ROUTE	BEGIN MP	END MP	Segment Length	Speed Limit	Terrain	ADT	% Trucks	Driving Lanes	Lane Width	Shoulder Width	Median Type	LOS	V/C
017-KY-3114 -000	0	0.2	0.2	35 mph	Rolling	1589 (2010)	Unknown	2	9 ft	3 ft (CR & NR)	None	A	0.15