CENTRAL VIRGINIA LONG-RANGE TRANSPORTATION PLAN – YEAR 2035

F. TRAFFIC AND SAFETY ANALYSIS DATA

APPENDIX

OCTOBER 2010

Data Collection

Traffic turning movement data were obtained from the Virginia Department of Transportation (VDOT) Southwestern Region Lynchburg District Traffic Engineering Section. However, 12-hour traffic turning movement counts were only available at ten out of the 18 selected study intersections. For the remaining eight intersections in this analysis, supplemental peak period turning movement counts were collected in the morning from 7 to 9 AM and afternoon from 4 to 6 PM on typical weekdays (Tuesday, Wednesday, and Thursday) in November and December of 2009. Tables 3-2 and 3-3 summarize the AM and PM peak hour turning movement volumes at the study intersections.

Table 3-2: AM Peak Hour Traffic Turning Movement Volumes

AM Peak Hour Traffic Turning Movement Volumes												
ID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	0	0	0	45	0	98	0	224	210	120	268	0
2	0	0	0	137	0	141	44	220	0	0	268	36
3	52	0	1	0	0	0	0	256	41	3	256	0
4	0	2	0	25	1	6	5	5	0	0	6	63
5	5	0	53	6	1	1	1	312	7	9	116	3
6	11	0	9	0	0	0	0	358	14	3	101	0
7	328	627	1	22	415	767	665	3	176	6	17	53
8	18	16	3	35	4	310	264	194	4	1	533	109
9	64	111	165	236	58	69	71	602	57	143	365	82
10	32	818	108	368	473	38	7	49	16	104	130	818
11	125	85	184	687	134	556	674	1,388	47	157	1,603	495
12	409	25	473	73	46	35	33	1,355	421	624	1,378	58
13	258	356	248	568	516	139	460	647	78	435	1,027	552
14	28	323	32	402	269	25	24	124	29	79	96	372
15	447	1,792	171	316	1,882	192	454	98	347	172	94	96
16	136	2,161	533	170	482	948	0	0	35	197	41	164
17	14	1,848	52	415	1,015	2	0	0	0	48	2	1,034
18	204	0	7	0	0	0	0	445	54	5	915	0

Table 3-3: PM Peak Hour Traffic Turning Movement Volumes

ID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	0	0	0	28	0	73	0	237	209	89	359	0
2	0	0	0	103	0	252	106	199	0	0	208	37
3	62	0	4	0	0	0	0	237	64	0	141	0
4	0	0	0	21	1	13	4	15	0	0	9	44
5	3	1	21	4	0	2	1	166	8	50	282	5
6	23	0	10	0	0	0	0	199	16	15	364	0
7	82	269	1	41	491	577	473	16	54	2	5	22
8	1	10	1	116	9	256	323	403	11	6	247	99
9	70	62	63	106	116	59	115	501	70	229	682	266
10	13	552	111	719	834	27	44	194	57	158	85	444
11	65	47	44	677	63	553	768	1,504	42	107	1,719	668
12	447	25	812	74	26	16	44	1,065	411	803	1,291	52
13	176	813	410	351	771	168	633	932	170	597	1,280	776
14	71	481	95	533	552	25	47	171	55	202	220	634
15	522	2,676	317	384	2,924	274	407	49	542	181	97	27
16	50	2,165	275	130	1,775	529	0	0	56	787	29	299
17	13	1,621	66	890	1,390	5	0	0	6	82	0	998
18	78	0	14	0	0	0	0	977	197	17	538	0

Collisions by Type

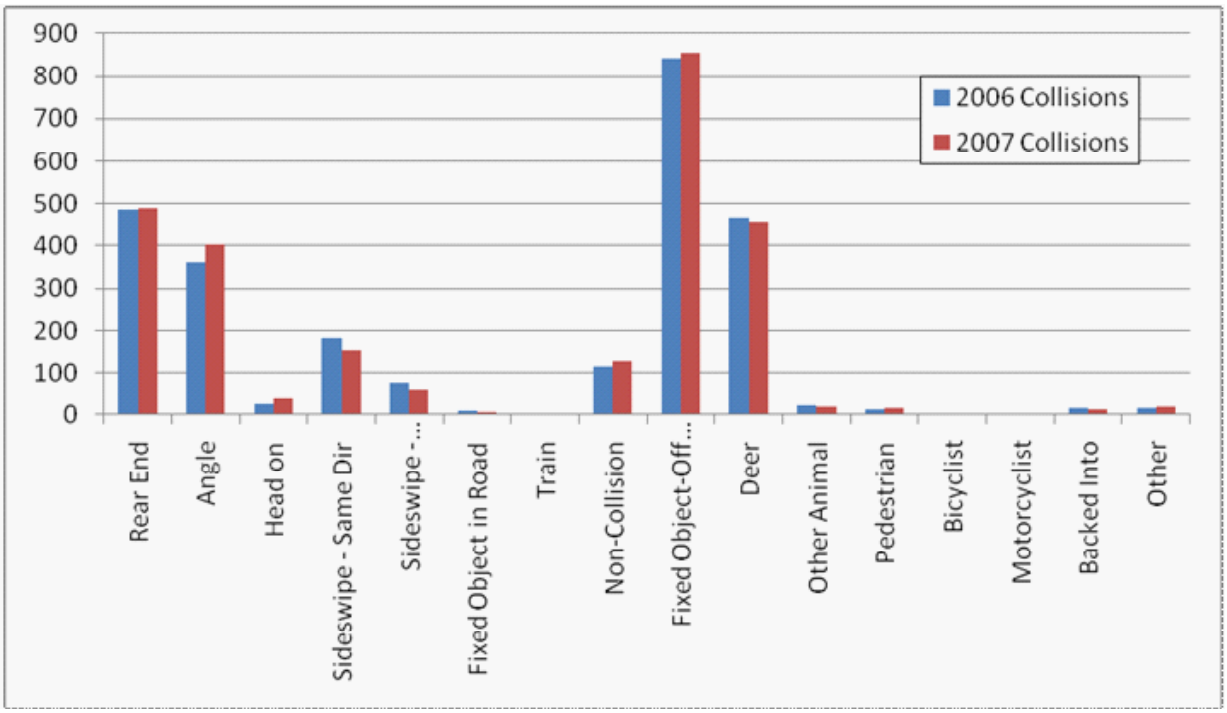
A more detailed analysis of collision types was conducted for Amherst, Bedford, and Campbell counties. The second VDOT collision dataset was used for this analysis because it included more specific attributes for each incident, including: collision type, roadway facility type, intersection type, traffic control device, severity of injury, and day of the week. The results for collision type are displayed in Table 3-7 and Figure 3-6.

The most common collision types were (a) fixed object – off road (32%), (b) rear end (18%), and (c) deer (17%). There were 27 reported pedestrian accidents and no reported bicyclist accidents out of a two-year total of 5,290 collisions. This VDOT Lynchburg district dataset excludes traffic collisions located within the Lynchburg city limits because those are collected and reported by the Lynchburg Police Department. This explains the lack of pedestrian or bicycle collisions, as well as the prevalence of collisions involving deer and other animals (966) for a mostly rural area.

Table 3-7: Collisions by Type for Amherst, Bedford, and Campbell Counties (2006-7)

Type	Description	2006	2007	Sum	%
01	Rear End	486	489	975	18%
02	Angle	362	404	766	14%
03	Head on	26	38	64	1%
04	Sideswipe - Same Dir	182	154	336	6%
05	Sideswipe - Opposite Dir	75	61	136	3%
06	Fixed Object in Road	9	7	16	0%
07	Train	0	0	0	0%
08	Non-Collision	116	127	243	5%
09	Fixed Object-Off Road	843	855	1,698	32%
10	Deer	468	457	925	17%
11	Other Animal	23	18	41	1%
12	Pedestrian	11	16	27	1%
13	Bicyclist	0	0	0	0%
14	Motorcyclist	0	0	0	0%
15	Backed Into	17	12	29	1%
16	Other	16	18	34	1%
	TOTAL	2,634	2,656	5,290	

Figure 3-6: Frequency of Traffic Collisions by Type for Amherst, Bedford, and Campbell Counties (2006-7)



Collisions by Geographical Pattern

The coordinates (latitude/longitude) of traffic collision datasets were geocoded using Geographic Information Systems (GIS) software to analyze the pattern of traffic collisions for the MPO study area.

Reported collisions that did not include geographic coordinates were excluded from this dataset. Collisions located outside of the MPO boundary were also excluded, and the remaining data were analyzed by: injury types, number of vehicles involved, and total monetary damage. The results are shown in Tables 3-8 and 3-9. There were a much higher number of total collisions, fatalities, injuries, number of vehicles, and total damage amounts for the MPO portion of Campbell County than Amherst or Bedford counties.

Table 3-8: Collisions within the MPO Study Area (2006-7)

County	County Area*	Collisions	Fatalities	Injuries	Pedestrian Fatalities	Pedestrian Injuries	# of Vehicles	Damage Amount
05	Amherst	620	3	283	0	4	965	$2,892,912
09	Bedford	534	3	304	0	2	928	$2,548,245
15	Campbell	895	10	468	0	4	1,521	$4,506,539
	TOTAL	2,049	16	1,055	0	10	3,414	$9,947,696

Note 1 – Indicates that the data represents only portions located within the MPO study area.

The traffic collision dataset received from the City of Lynchburg included a much longer study period (3.75 years) and did not report the same type of information. These data are presented separate from the remainder of the MPO study area because of these differences.

Table 6 displays normalized collision rates (per study year) for all jurisdictions within the MPO study area. The results indicate that the City of Lynchburg has a collision rate that is between three- and four-times greater than the remaining county jurisdictions. Figures 3-7 and 3-8 display the geographical pattern of collisions per intersection, normalized by the number of sample years from each dataset.

Table 3-9: Collisions within the City of Lynchburg (2006-9)

Name	Collisions	Fatalities	Injuries	Pedestrian Fatalities	Pedestrian Injuries
Lynchburg	1,924	10	890	0	13

Figure 3-7: Collisions per Intersection – MPO Area

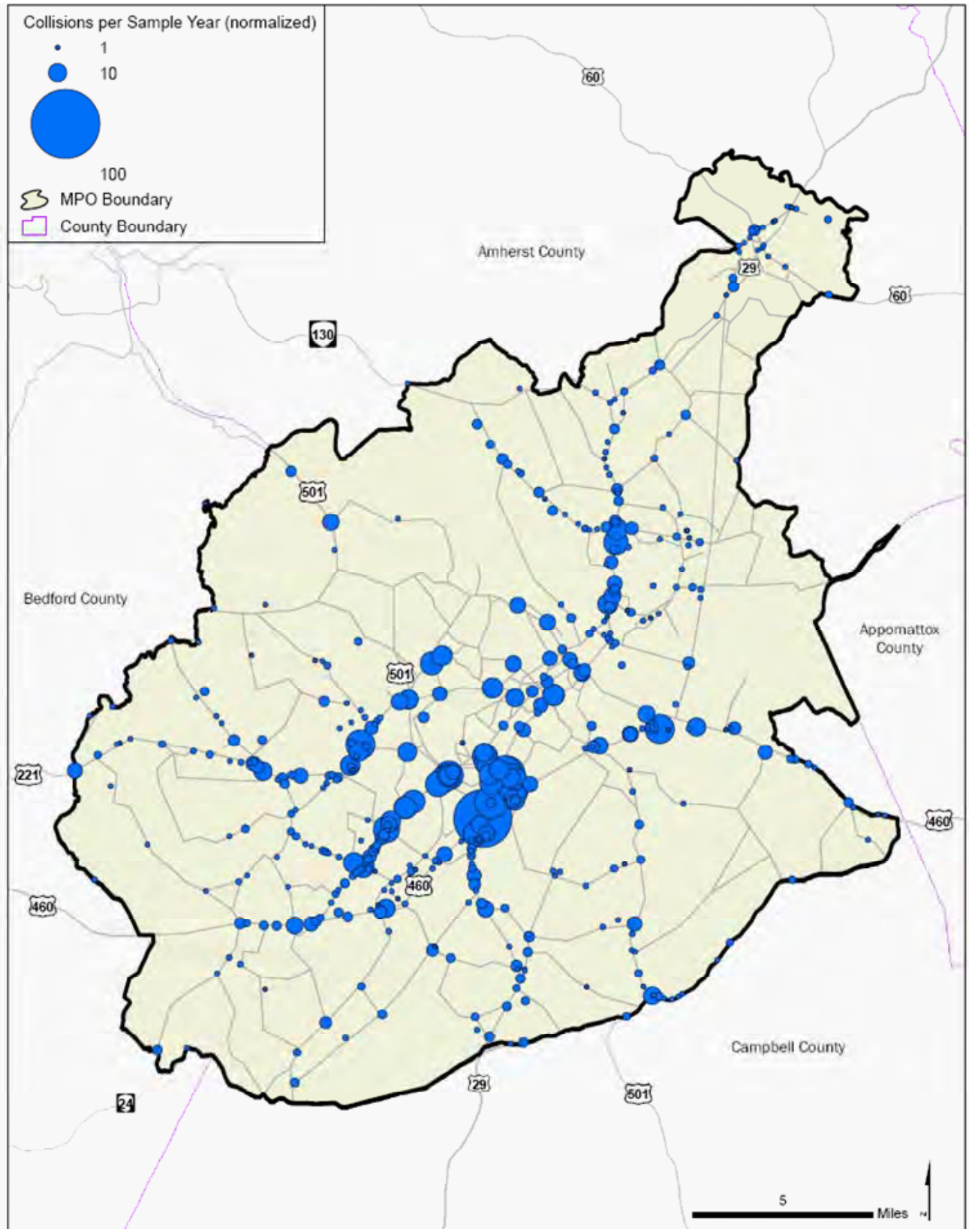
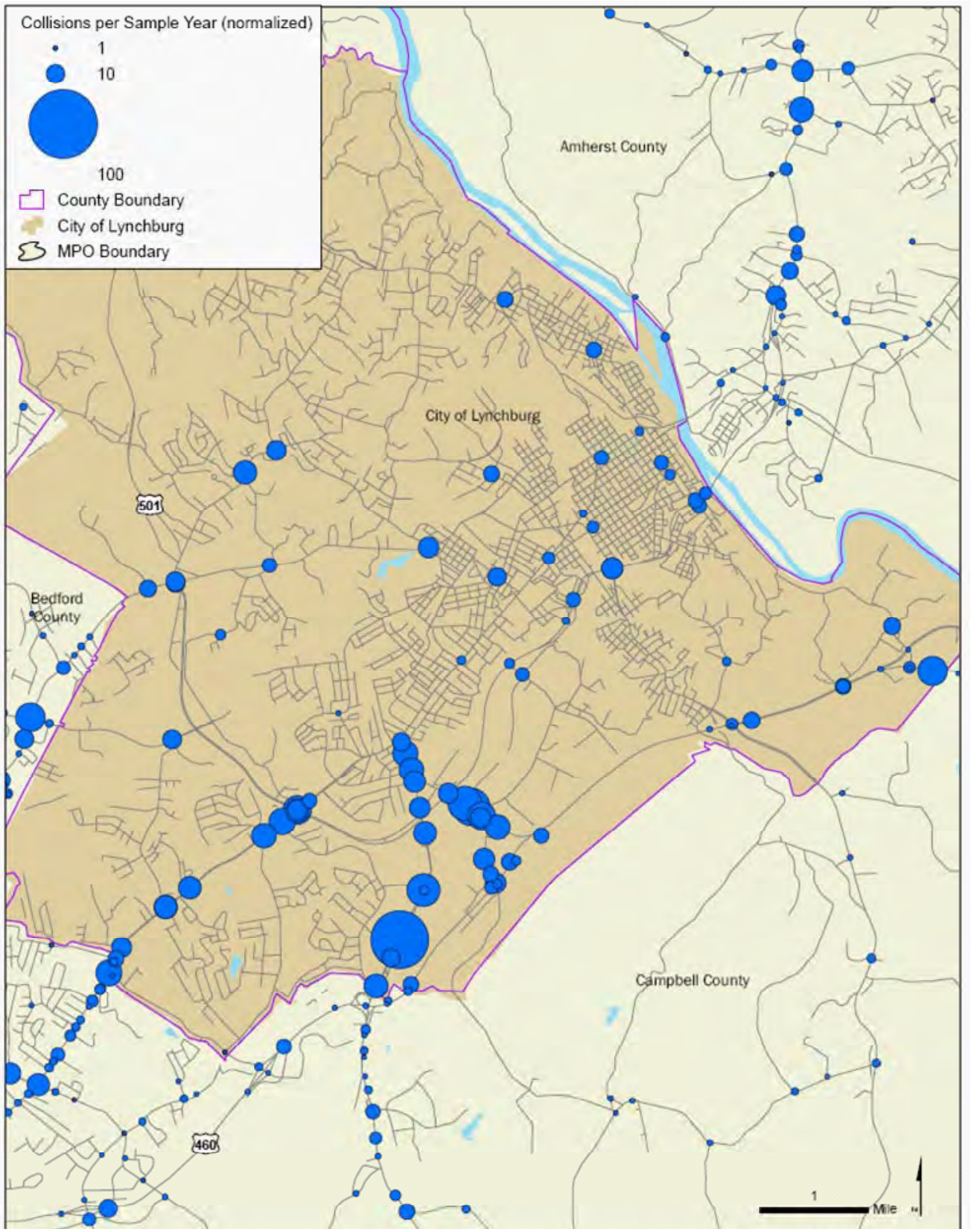


Figure 3-8: Collisions per Intersection – Lynchburg Area



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