Appendix

Crash Statistics and Ranking Priorities

Crash location priority rankings for both segments and intersections were developed using a variety of summary statistics, including traffic volumes, overall severity of crashes, and facility type. The inclusion of these components helps ensure that moneys earmarked for spot safety improvements are spent in the most efficient and cost-effective manner. The following tables provide the scoring criteria for the rankings of both segment and intersection analyses. The overall scoring for each type of location is also included in this appendix.

Segment Level Analysis

Measure 1 - Vehicles Per Day	
25,000 +	15
20,000 - 25,000	14
15,000 - 20,000	13
12,500 - 15,000	12
10,000 - 12,500	11
9,000 -10,000	10
8,000 - 9,000	9
7,000 - 8,000	8
6,000 - 7,000	7
5,000 - 6,000	6
4,000 - 5,000	5
3,000 - 4,000	4
2,000 - 3,000	3
1,000 - 2,000	2
0 - 1,000	1

Measure 2 - Total Crashes	
325 +	20
300 - 325	19
275 - 300	18
250 - 275	17
225 - 250	16
200 - 225	15
175 - 200	14
150 - 175	13
125 - 150	12
100 - 125	11
75 - 100	10
50 - 75	9
40 - 50	8
35 - 40	7
30 - 35	6
25 - 30	5
20 - 25	4
15 - 20	3
10 - 15	2
0 - 10	1

Measure 3 - Equivalent Property Damage Only	
1000 +	20
900 - 1000	19
800 - 900	18
700 - 800	17
600 - 700	16
500 - 600	15
450 - 500	14
400 - 450	13
350 - 400	12
300 - 350	11
250 - 300	10
200 - 250	9
175 - 200	8
150 - 175	7
100 - 150	6
75 - 100	5
50 - 75	4
30 - 50	3
15 - 30	2
0 - 15	1

Measure 4 - Crash Rate	
9.5+	20
9 - 9.5	19
8.5 - 9	18
8 - 8.5	17
7.5 - 8	16
7 - 7.5	15
6.5 - 7	14
6 - 6.5	13
5.5 - 6	12
5 - 5.5	11
4.5 - 5	10
4 - 4.5	9
3.5 - 4	8
3 - 3.5	7
2.5 -3	6
2 - 2.5	5
1.5 - 2	4
1 - 1.5	3
0.5 -1	2
0 - 0.5	1

Measure 5 - Functional Classification	
Principal Arterial	5
Minor Arterial	4
Major Collector	3
Minor Collector	2
Local	1

Mooresville Comprehensive Transportation Plan
Segment Priority Rankings
Crash Data Analyzed January 1, 2003 to December 31, 2005

No.	Locations	AADT	Score	Crashes	Score	EPDO	Score	Crash Rate	Score	Functional Classification	Score	Total Score
1	West Plaza Dr	38,000	15	291	18	1122.76	20	5.83	12	Principal Arterial	5	70
2	River Hwy	32,000	15	511	20	2235.68	20	3.14	7	Principal Arterial	5	67
3	E Plaza Dr	24,300	14	204	15	983.44	19	4.14	9	Principal Arterial	5	62
4	Brawley School Rd	9,400	10	324	19	1462.12	20	3.42	7	Principal Arterial	5	61
5	Williamson Rd	13,700	12	230	16	949.28	19	4.44	9	Principal Arterial	5	61
6	Oak Ridge Farm Rd	11,600	11	163	13	973.52	19	4.58	10	Principal Arterial	5	58
7	Charlotte Hwy	11,200	11	203	15	818.68	18	3.04	7	Principal Arterial	5	56
8	Wilson Ave	7,000	8	99	10	599.24	15	7.18	15	Principal Arterial	5	53
9	Mecklenburg Hwy	8,800	9	122	11	823	18	2.21	5	Principal Arterial	5	48
10	Iredell Ave/Coddle Creek Hwy	8,000	9	142	12	498.68	14	2.54	6	Principal Arterial	5	46
11	N Broad St	13100	12	121	11	431.8	13	2.50	5	Principal Arterial	5	46
12	N Main St/Landis Hwy	4700	5	92	10	328.8	11	6.12	13	Principal Arterial	5	44
13	Mclelland Avenue	8100	9	40	8	173.2	7	4.96	10	Major Collector	3	37
14	Magnolia St	1000	2	25	5	76.8	5	14.45	20	Minor Arterial	4	36
15	Rolling Hills Rd	6000	7	40	8	114	6	5.85	12	Major Collector	3	36
16	Jackson Rd	11000	11	38	7	178.6	8	2.56	6	Minor Collector	2	34
17	Lowrance Ave	2500	3	17	3	39.2	3	10.02	20	Minor Arterial	4	33
18	Perth Rd	7600	8	58	9	311.08	11	1.40	3	Minor Collector	2	33
19	Shinnville Rd	4000	5	40	8	299.96	10	2.49	5	Major Collector	3	31
20	Mills Ave/Shearers Rd	5000	6	32	6	277.16	10	1.18	3	Principal Arterial	5	30
21	Center Ave	5000	6	27	5	115.8	6	3.85	8	Minor Arterial	4	29
22	Fern Hill Dr	170	1	8	1	15.4	2	9.28	19	Minor Collector	2	25
23	Langtree Rd	2600	3	17	3	226.16	9	2.01	5	Principal Arterial	5	25

Intersection Level Analysis

Measure 1 - Vehicles Entering (Per Day)	
50,000 +	20
45,000 - 50,000	19
40,000 - 45,000	18
37,500 - 40,000	17
35,000 - 37,500	16
32,500 - 35,000	15
30,000 - 32,500	14
27,500 - 30,000	13
25,000 - 27,500	12
23,000 - 25,000	11
21,000 - 23,000	10
20,000 - 21,000	9
17,500 - 20,000	8
15,000 - 17,500	7
14,000 - 15,000	6
13,000 - 14,000	5
12,000 - 13,000	4
10,000 - 12,000	3
5,000 - 10,000	2
0 - 5,000	1

Measure 2 - Total Crashes	
35+	20
34	19
33	18
30-32	17
28-30	16
26-28	15
24-26	14
22-24	13
20-22	12
19	11
18	10
17	9
16	8
15	7
14	6
13	5
12	4
11	3
5 - 10	2
0 - 5	1

Measure 3 - Equivalent Property Damage Only	
140+	20
130 - 140	19
120 - 130	18
110 - 120	17
105 - 110	16
100 - 105	15
90 - 100	14
80 - 90	13
75 - 80	12
70 - 75	11
65 - 70	10
60 - 65	9
55 - 60	8
50 - 55	7
45 - 50	6
40 - 45	5
35 - 40	4
30 - 35	3
25 - 30	2
0 - 25	1

Measure 4 - MEV Rate	
2.0+	20
1.9 -2.0	19
1.8 - 1.9	18
1.7 - 1.8	17
1.6 - 1.7	16
1.5 - 1.6	15
1.4 - 1.5	14
1.3 - 1.4	13
1.2 - 1.3	12
1.1 - 1.2	11
1 - 1.1	10
0.1 - 1	9
0.8 - 0.9	8
0.7 - 0.8	7
0.6 - 0.7	6
0.5 - 0.6	5
0.4 - 0.5	4
0.3 - 0.4	3
0.2 - 0.3	2
0 - 0.2	1

Measure 5 - Functional Classification	
Principal Arterial	5
Minor Arterial	4
Major Collector	3
Minor Collector	2
Local	1

Mooresville Comprehensive Transportation Plan
Intersection Priority Rankings
Crash Data Analyzed January 1, 2003 to December 31, 2005

No.	Street 1	Street 2	Vehicles Entering	Score	Crashes	Score	EPDO	Score	MEV Rate	Score	Functional Classification	Score	Total Score
1	Brawley School Rd	Williamson	36,000	16	34	19	130.2	19	1.94	19	Principal Arterial	5	78
2	Williamson Rd	River	45,000	19	33	18	107	16	2.32	20	Principal Arterial	5	78
3	Brawley School Rd/Wilson Ave	Charlotte Hwy (US 21)	25,000	12	34	19	137.6	19	2.82	20	Principal Arterial	5	75
4	Rolling Hills Rd	River Hwy	33,000	15	30	17	104	15	27.40	20	Major Collector	3	70
5	Williamson Rd	US 21	29,000	13	29	16	125.2	18	1.66	16	Principal Arterial	5	68
6	West Plaza Dr	Talbert	42,800	18	29	16	276.16	20	0.756686	7	Principal Arterial	5	66
7	River Hwy	I-77	92,000	20	38	20	75	12	0.99152	9	Principal Arterial	5	66
8	Wilson Ave	Broad	10,600	3	24	14	195.68	20	3.13	20	Principal Arterial	5	62
9	Oak Ridge Farm Hwy/Plaza Dr	Broad (NC 150)	30,000	14	25	14	91.6	14	1.14	11	Principal Arterial	5	58
10	West Plaza Dr	Norman Station	36,000	16	21	12	58	8	0.55	5	Principal Arterial	5	46
11	Iredell Avenue	Johnson Dairy	10500	3	16	8	60.4	9	1.80	18	Principal Arterial	5	43
12	Williamson Rd	Alcove	17000	7	18	10	69.8	10	1.03	10	Principal Arterial	5	42
13	Iredell Avenue	Statesville	17100	7	14	6	36.2	4	1.80	18	Principal Arterial	5	40
14	Oak Ridge Farm Hwy	Flowering Grove Rd	12000	4	12	4	124.48	18	1.00	9	Principal Arterial	5	40
15	River Hwy	Perth	38800	17	15	7	44.6	5	0.428082	4	Principal Arterial	5	38
16	Oak Ridge Farm Hwy	NC 152	13600	5	13	5	72.2	11	1.08	10	Principal Arterial	5	36
17	Charlotte Hwy	Cornelius	14900	6	13	5	57.4	8	1.187215	11	Principal Arterial	5	35
18	E Plaza Dr	Agape	21000	10	12	4	63.8	9	0.55	5	Principal Arterial	5	33
19	Landis Hwy	Statesville	17200	7	13	5	42.6	5	1.19	11	Principal Arterial	5	33
20	Brawley School Rd	Morrison Plantation	21000	10	15	7	37.2	4	0.68	6	Principal Arterial	5	32
21	E Plaza Dr	Iredell	28900	13	14	6	28.8	2	0.64	6	Principal Arterial	5	32
22	Wilson Ave	Academy	8000	2	11	3	48	6	1.44	14	Principal Arterial	5	30
23	River Hwy	Leisurewood	33000	15	12	4	26.8	2	0.342466	3	Principal Arterial	5	29
24	Brawley School Rd	Sunfish/Talbert	18000	8	10	2	47	6	0.76	7	Principal Arterial	5	28
25	Oak Ridge Farm Hwy	Selma	13000	5	12	4	41.6	5	1.00	9	Principal Arterial	5	28
26	Brawley School Rd	Canvas Back/Oak Tree	23000	11	10	2	32.2	3	0.46	4	Principal Arterial	5	25
27	Oak Ridge Farm Hwy	Goodwin	12000	4	11	3	33.2	3	0.91	9	Principal Arterial	5	24
28	Williamson Rd	Raceway	14000	6	11	3	25.8	2	0.77	7	Principal Arterial	5	23

Model Documentation

Introduction

This memorandum documents the modification and use of the Metrolina Regional Travel Demand Model for the purposes of assisting in the determination of future transportation deficiencies and the evaluation of future alternatives for the Mooresville Comprehensive Transportation Plan.

Model Background

The Metrolina Regional Travel Demand Model was developed in 2005, with a base year of 2000 and a future year of 2030. The modeling area covers an eleven county, bi-state region. It includes all of Cabarrus, Gaston, Lincoln, Mecklenburg, Rowan, Stanly, and Union Counties in North Carolina, as well as, the eastern portion of Cleveland County encompassing the cities of Kings Mountain and Shelby, and the southern portion of Iredell County encompassing the Town of Mooresville. The region also includes all of York County and the northern panhandle of Lancaster County in South Carolina. The Metrolina region has 2,934 internal traffic analysis zones (TAZ) and 65 external stations for a total of 2,999 TAZ. The model TAZ are based on the 2000 Census TAZ boundaries with a few changes.

While the model is robust and has the capability to model the entire region and the impacts of transportation changes made in the region, it requires revision and refinement before being able to be applied for this study.

The base and future year model were reviewed for accuracy not only of model inputs, but for accuracy of model outputs as well. This data review has been documented and can be found in the two previous memos; Metrolina Model 2000 Data Review and Metrolina Model 2030 Data Review. These memos are also included in Appendices B and C.

In summary, the data review found that the regional model was adequate for use in the Mooresville area, with slight modification based on the size of the study area. It was determined that the work in the area would be done through a subarea modeling process which required the disaggregation of some traffic analysis zones and the coding of some more local roads in the model network.

Model Revisions

As noted above, the Metrolina Regional Model has 2934 internal TAZ's. For the purposes of the CTP modeling, 13 internal zones were split and/or reconfigured to form 27 zones. This increased the total number of internal zones in the Metrolina Regional Model to 2948. The zone splits used can be seen in **Figure 1** in Appendix A. The socioeconomic data for these zones along with the corresponding zone split information can be seen in **Table 1** below.

Table 1: Model Traffic Analysis Zone (TAZ) Socioeconomic Data Comparison							
Original Zones	**Population**	**Households**	**Total Employment**	**New Split Zones**	**Population**	**Households**	**Total Employment**
5018	1395	545	729	**5018**	522	207	365
				5078	873	338	365
5021	1439	562	4	**5021**	438	197	1
				5079	978	349	2
				5080	23	15	2
5026	2168	847	587	**5026**	1549	645	374
5027	873	341	175	**5027**	641	252	88
				5081	232	89	88
5028	1105	431	212	**5028**	1342	540	374
				5082	189	85	374
5029	814	329	672	**5029**	488	174	374
5030	1864	728	175	**5030**	1219	442	105
				5083	645	286	70
5033	2181	852	95	**5033**	1390	546	24
				5084	791	306	71
5034	450	180	536	**5034**	27	15	266
				5085	171	77	133
				5086	58	23	133
				5087	100	40	67
				5088	42	17	266
5036	2455	935	371	**5036**	1389	586	186
				5089	1066	349	186
5037	2094	788	268	**5037**	1421	494	134
				5090	673	294	134
5075	815	307	400	**5075**	1333	470	374
5076	1255	483	794	**5076**	1166	419	200
				5091	140	72	266
Total	18908	7328	5018	**Total**	18908	7328	5018

The model roadway network was fairly adequate in the study area, but was improved to include several new smaller TAZ's. A number of area roads were added however to provide for local connections that were not in the regional model. These new roadway additions can be seen in **Figure 2** in Appendix A.

Subarea Model

For the Mooresville CTP work, a Subarea Analysis Tool (SAT) was developed that selects and isolates a portion of the regional model that the user can further analyze. This tool allows the user to modify the network outside of the regional model framework and makes viewing results much easier and meaningful on a smaller scale.

Because the zone structure of the model was changed, the Metrolina Regional Model had to be revised to reflect the new structure. Steps in the model that were revised included:

- TAZ Geography
- TAZ Socioeconomic Data
- Master Network
- Parking Cost Matrix
- Areatype Script File

Table 2 on the following page shows this information along with the file names.

Table 2: Revised Model Steps			
Model Change	**Existing Model File**	**New Model File**	**Note**
The TAZ geography was modified to reflect the new TAZ's	metrolina_taz2934.dbd	metrolina_taz2948.dbd	None
	taz2999.dbd	Taz3013.dbd	
The TAZ socioeconomic data was modified to reflect the new TAZ's	SE2030_taz2934.dbf	SE2030_taz2948.dbf	None
The master network was modified with additional roadway segments and centroid connectors were revised to reflect the new TAZ's	master050720.dbd	master050720_2948zones.dbd	None
The parking cost matrix was modified to reflect the new zone structure	parking_cost_matrix.mtx	parking_cost_matrix.mtx	file was replaced
The areatype.rsc file was modified to reflect the new number of TAZ's	areatype.rsc	areatype.rsc	Line 291 changed to 2948 zones

Community Viz

The Metrolina Regional Model was used to help develop Measures of Effectiveness (MOE's) from the Community Viz output for the Business-as-Usual (BAU) and Compact Development Scenarios. The results of this analysis are presented in the Mooresville CTP final report, but **Table 3** shows the input socioeconomic data used in these scenarios as well as the base 2030 model (MODEL) socioeconomic data for the study area.

Table 3: Socioeconomic Input Data

	Households			Population			Employment		
TAZ	MODEL	BAU	Compact	MODEL	BAU	Compact	MODEL	BAU	Compact
5006	519	519	519	1,329	1,329	1,329	174	174	174
5007	522	8	8	1,336	21	21	305	104	104
5008	532	3	3	1,362	8	8	35	39	39
5009	503	79	67	1,288	208	173	175	832	828
5010	545	118	25	1,395	310	65	330	349	314
5011	488	48	9	1,249	126	23	551	121	106
5012	748	439	57	1,915	1,154	147	769	854	711
5013	388	388	388	993	993	993	45	45	45
5014	625	305	42	1,600	802	109	404	618	520
5015	720	2,643	78	1,843	6,948	202	1,112	1,927	972
5016	638	254	38	1,633	668	98	637	550	469
5017	373	1,250	2,350	955	3,286	6,074	1,356	911	1,771
5018	207	729	1,348	522	1,917	3,484	771	532	1,025
5019	429	562	580	1,098	1,477	1,499	1,075	409	264
5020	184	60	60	471	158	155	1,189	37	36
5021	197	70	70	438	184	181	120	43	43
5022	477	142	139	1,221	373	359	1,524	87	86
5023	226	175	175	579	460	452	291	107	107
5024	241	112	112	617	294	289	76	68	68
5025	262	200	200	671	526	517	174	122	122
5026	645	227	285	1,549	597	737	845	159	174
5027	252	26	26	641	68	67	276	16	16
5028	540	300	302	1,342	789	781	845	270	168
5029	174	286	607	488	752	1,569	845	331	494
5030	442	332	657	1,219	873	1,698	188	396	525
5031	487	967	1,070	1,247	2,542	2,766	702	705	527
5032	480	326	333	1,229	857	861	383	238	148
5033	546	1,335	2,399	1,390	3,510	6,201	138	974	1,796
5034	15	31	78	27	81	202	419	154	73
5035	561	822	1,197	1,436	2,161	3,094	928	618	782
5036	586	831	984	1,389	2,185	2,543	516	606	562
5037	494	522	684	1,421	1,372	1,768	491	380	440
5038	740	666	666	1,916	1,751	1,721	493	486	284
5039	750	420	421	1,920	1,104	1,088	57	306	181

	Households			Population			Employment		
TAZ	MODEL	BAU	Compact	MODEL	BAU	Compact	MODEL	BAU	Compact
5040	315	277	288	806	728	744	457	169	177
5041	272	150	150	696	394	388	51	92	92
5042	249	267	267	637	702	690	116	163	163
5043	231	243	243	591	639	628	301	148	148
5044	703	964	1,942	1,800	2,534	5,020	525	703	1,520
5045	652	1,192	181	1,669	3,134	468	651	869	510
5046	256	464	42	655	1,220	109	350	682	524
5047	680	1,301	237	1,741	3,420	613	46	948	490
5048	201	51	15	515	134	39	43	200	186
5049	262	155	16	671	407	41	199	255	204
5050	750	1,516	83	1,920	3,986	215	792	2,546	2,012
5051	550	334	334	1,408	878	863	1,821	12,451	12,451
5052	760	1,507	1,482	1,946	3,962	3,831	1,946	2,187	1,734
5053	326	152	152	844	400	393	4,999	5,766	5,766
5054	468	579	579	1,219	1,522	1,497	581	422	246
5055	1,075	405	907	2,752	1,065	2,344	1,427	229	720
5056	294	209	271	753	549	700	1,182	153	174
5057	561	440	440	1,436	1,157	1,137	514	321	188
5058	40	173	184	102	455	476	547	126	89
5059	64	303	354	164	797	915	414	221	186
5060	194	170	170	497	447	439	121	103	103
5061	1,300	324	324	3,328	852	837	829	2,359	2,358
5062	1,150	568	678	2,944	1,493	1,752	821	3,170	3,237
5063	850	347	920	2,176	912	2,378	1,435	224	792
5064	428	477	689	1,096	1,254	1,781	2,976	348	441
5065	1,550	1,056	1,056	3,968	2,776	2,730	722	446	446
5066	1,350	760	760	3,456	1,998	1,964	1,494	468	323
5067	1,500	900	900	3,840	2,366	2,326	337	443	381
5068	1,250	1,683	4,095	3,200	4,425	10,585	2,717	1,113	3,296
5069	1,000	640	672	2,560	1,683	1,737	1,797	403	309
5070	875	604	627	2,240	1,588	1,621	780	349	287
5071	1,180	1,780	1,945	3,021	4,680	5,027	1,195	1,209	967
5072	900	1,132	402	2,304	2,976	1,039	194	709	437
5073	950	1,815	290	2,432	4,772	750	292	1,249	681
5074	405	1,238	37	1,037	3,255	96	512	903	455
5075	470	291	519	1,333	765	1,342	845	408	406
5076	419	245	690	1,166	644	1,784	314	636	646
5077	604	276	276	1,537	726	713	3,659	1,976	1,906
5078	338	553	841	873	1,454	2,174	771	403	561
5079	349	22	22	978	58	57	240	14	14
5080	15	24	24	23	63	62	240	14	14
5081	89	132	186	232	347	481	276	145	136

	Households			Population			Employment		
TAZ	MODEL	BAU	Compact	MODEL	BAU	Compact	MODEL	BAU	Compact
5082	85	52	78	189	137	202	845	59	66
5083	286	185	611	645	486	1,579	126	245	564
5084	306	142	237	791	373	613	414	186	198
5085	77	41	82	171	108	212	210	47	74
5086	23	52	130	58	137	336	210	257	121
5087	40	36	89	100	95	230	105	41	84
5088	17	48	121	42	126	313	419	164	113
5089	349	179	240	1,066	471	620	516	131	159
5090	294	229	497	673	602	1,285	491	220	437
5091	72	89	292	140	233	754	419	204	273
Total	42,960	41,967	42,644	110,170	110,269	110,204	61,523	60,865	61,839

APPENDIX A
Figures

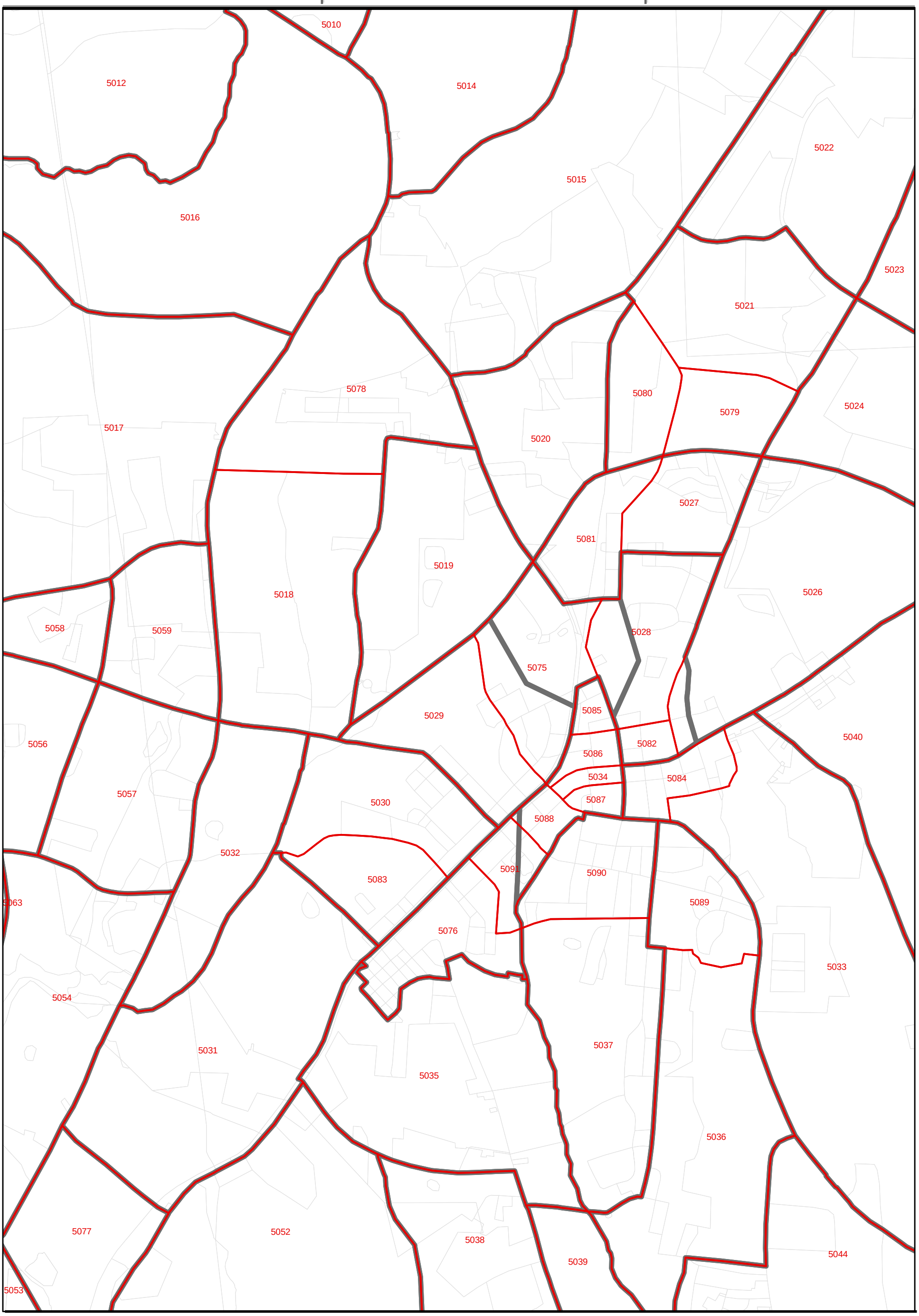

Figure 1: TAZ Changes in Study Area

Existing Zones | New Zones | Census Blocks

0 0.25 0.5 1 Miles

N W E S

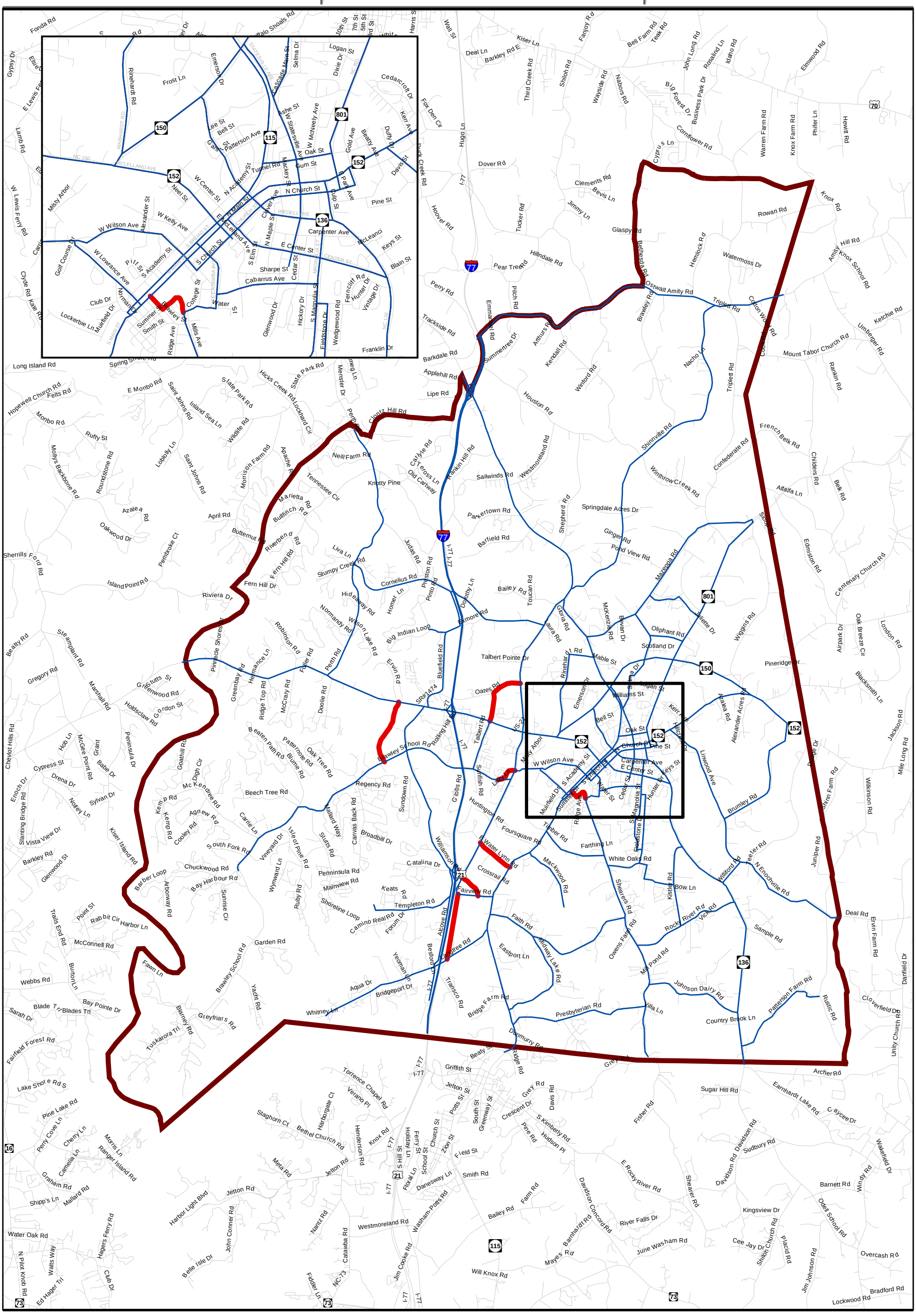

FIGURE 2: Network Roads Added for Subarea Modeling

APPENDIX B
2000 Data Review Memo

Kimley-Horn
and Associates, Inc.

March 24, 2006

To: Chris Bauer, Town of Mooresville

From: Craig Gresham, Kimley-Horn and Associates, Inc.

P.O. Box 33068
Raleigh, North Carolina
27636-3068

Cc: Tim Brown, Town of Mooresville
Katherine English, NCDOT
Terry Arellano, NCDOT
Stephen Stansbery, Kimley-Horn and Associates, Inc.

Re: Metrolina Model 2000 Data Review

Dear Chris:

As you know, the Metrolina model will be used to study the Mooresville Comprehensive Transportation Plan. While the Metrolina model includes the entire Mooresville study area within it, it also contains the entire Charlotte region, encompassing a large area. With this in mind, the model has been calibrated to regional and county controls, but has not undergone a thorough inspection with regards to the Mooresville study area that we would use for subarea analysis. As part of this study, we will review the assumed/observed data and model performance for both the model base year (2000) and future year (2030). The purpose of this memorandum is to present the data within the 2000 base year for review by the model team for use in the subarea model analysis.

Attached are ten maps showing data and attributes of the current regional model that we would like you to consider and review for accuracy and appropriateness. We have divided the 2000 model data review into five tasks:

1. Review Regional Model Traffic Analysis Zone (TAZ) structure
2. Review model base year (2000) housing and employment data
3. Review network structure and attributes
4. Review existing model (2000) count coverage and accuracy
5. Review model performance in Mooresville study area

Task 1. Review of Regional Model TAZ structure

The first task is to review the model TAZ structure for appropriateness with regards to total number of zones, their structure, and their relationship to the network structure.

The Transportation Model Improvement Program (TMIP) provides some rules of thumb regarding zone size:

- .9 TAZ's per square mile (under 200,000 population)
- 1 TAZ per 1000 population (more than 1 for smaller areas)

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Mooresville study area statistics:

- 133 square miles (approximately)
- 45,377 population

Based on the rules of thumb, density calculation (TAZ's per square mile) would come out as 120 zones and the population calculation would come out as a minimum of 45 zones. Therefore, the number of zones in the study area based on the rules of thumb should be between 45 and 120. Currently, the study area has 72 zones.

The number of zones is adequate based on the rules of thumb. From a logic standpoint, the number makes sense as well. However, the size of the zones might be a potential problem in the downtown area. We suggest that we subdivide zones in this part of the model. A preliminary map of the proposed zone changes can be seen in **Figure 1**. As you can see, zones 5028, 5029 and 5075 do not follow census blocks, and in fact, split blocks. The three zones together do follow census blocks and the sum of the three zones equals the blocks within the three zones. We recommend adjusting these zones to match census blocks and the street network.

Along with the three zones mentioned above, zones 5018, 5021, 5027, 5028, 5030, 5033, 5034, 5036, 5037, and 5076 are possible candidates to be resized. A preliminary analysis in **Figure 1** shows those zones with recommended splits for the Mooresville TAZ's.

As a point of reference, **Figure 2** (Modeled Roads and Traffic Analysis Zones) showing the modeled roadways in relation to the TAZ's can be found in the appendix.

Task 2. Review of model base year (2000) housing and employment data

The base year housing data came directly from the census. The numbers match in all cases except the three zones noted above that split blocks (zones 5028, 5029 and 5075). Again, the three zones do split blocks but the sum of the three zones equals the blocks within those zones.

We do not have the original source data to compare the employment data against. If we decide to change the zones, this source data would be necessary to reallocate the employment data to the new zone system. At this point, we have to depend on Mooresville staff to provide any feedback on the appropriateness of the employment data from their local experience, and if we cannot access the original source data, provide us with guidance for reallocating employment data to a more refined zone structure.

Figure 3 (Households, Year 2000 (by TAZ)) and **Figure 4** (Employment in Study Area, Year 2000 (by TAZ)) can be found in the appendix for your review.

Task 3. Review of network structure and attributes

The network appears to be very robust and contains all of the connections that make sense for the area. One or two roadways could possibly be added if any zones are split (to be determined if/when zones are split). The network does contain many links that do not follow standard modeling "rules". For instance, there are quite a few dead end roads that have centroid connectors attached at either the end or some

internal point on the road. The reason for this coding should be explored and fixed if no reasonable explanation can be found.

It is quite likely that during the network review, the study team may identify roads not in the model that they would like for consideration in the model network, such as a road that will be considered as a collector street in the future, or a road that provides a key connection now or in the future. We would ask that you identify these roads and mark them on one of the provided figures. Additional roads, however, may require an additional iteration of TAZ structure review, along with subsequent data requests for street information.

A preliminary check of the attributes in the Mooresville area pass basic quality control checks in all places except those noted below (attributes checked: lanes, speed limit, pedestrian activity, development density, driveway density, land use, area type, facility type, functional class, and parking). We ask that you review the data as well and note any questionable data that you encounter.

Posted Speed Check
Brawley School Road shows a short link of 35 mph in the middle of two much longer 45 mph links.
NC 150 east of McCrary Rd shows a short link of 45 mph in the middle of two much longer 55 mph links.
The speed on Interstate 77 is inconsistent by direction and location (55 mph and 65 mph).

Figure 5 (Number of Lanes on Modeled Roads), **Figure 6** (Posted Speeds on Modeled Roads), and **Figure 7** (Model Functional Class on Modeled Roads) can be found in the appendix.

Task 4. Review existing model (2000) count coverage and accuracy

There is a field in the network attributes called AAWT00 (Average Annual Weekday Traffic year 2000) which appears to correspond with the NCDOT 2000 AADT's (factored to a weekday number, obviously). The numbers are not identical but are very similar in all cases. The count coverage in the Mooresville area is mostly adequate. There are 379 links in Iredell County, of which 116 are centroid connector links. Of the 263 road links in the county, 118 of them have count information. This equates to approximately 45% of the links (non centroids) in Iredell County having count information. Despite the good overall coverage, the counts are a sparse in the downtown area, especially along Church Street, and may require supplemental data as available from this study and other local data.

Figure 8 (Traffic Counts on Modeled Roads) can be found in the appendix.

Kimley-Horn
and Associates, Inc.

Task 5. Review model performance in Mooresville study area

A review of the model performance in the study area shows that the model, on aggregate is performing very well in the study area. Overall, the model is loading 8% high, which is acceptable for a subarea of this size in a regional model. When reviewing by facility type, most facilities load well within the acceptable targets. The exceptions to this are collectors and local streets, which load high. These loading issues will be addressed during the subarea model refinement and calibration.

Figure 9 (Loaded Volumes on Modeled Roads) and **Figure 10** (Percent Difference in Loaded Volumes) can be found in the appendix. The table below shows the model performance by facility type.

Comparison of Daily Traffic Volumes by Facility Type

Facility Type	Number of Links	Links with Counts	Model Loading	Count	Loading/Count	Target
Interstate/Freeway	27	12	398,388	372,000	7.1%	7.0%
Major Thoroughfare	158	83	837,872	778,870	7.6%	10.0%
Minor Thoroughfare	29	6	26,568	27,200	-2.3%	15.0%
Collector	26	12	29,535	23,000	28.4%	25.0%
Local	10	4	8,538	3,780	125.9%	25.0%
Total Sub-area	250	117	1,300,901	1,204,850	8.0%	10.0%

Conclusions

After an initial review, the Metrolina model looks adequate for use in the Mooresville subarea modeling analysis. The model will need refinement at the local level, along with the correction of any errors that are found in this review or any subsequent data reviews. But, in general, the regional model is in good shape in the Mooresville area, and should provide a good tool for meaningful transportation analysis.

Please review the included maps for accuracy, along with suggested network/TAZ additions and corrections, and submit them back to us at your earliest convenience. If you have any questions, please do not hesitate to call me at 919-677-2127

Sincerely,

Craig Gresham, P.E., AICP
Kimley-Horn and Associates, Inc.
3001 Weston Parkway
Cary, NC, 27513

Kimley-Horn
and Associates, Inc.

APPENDIX

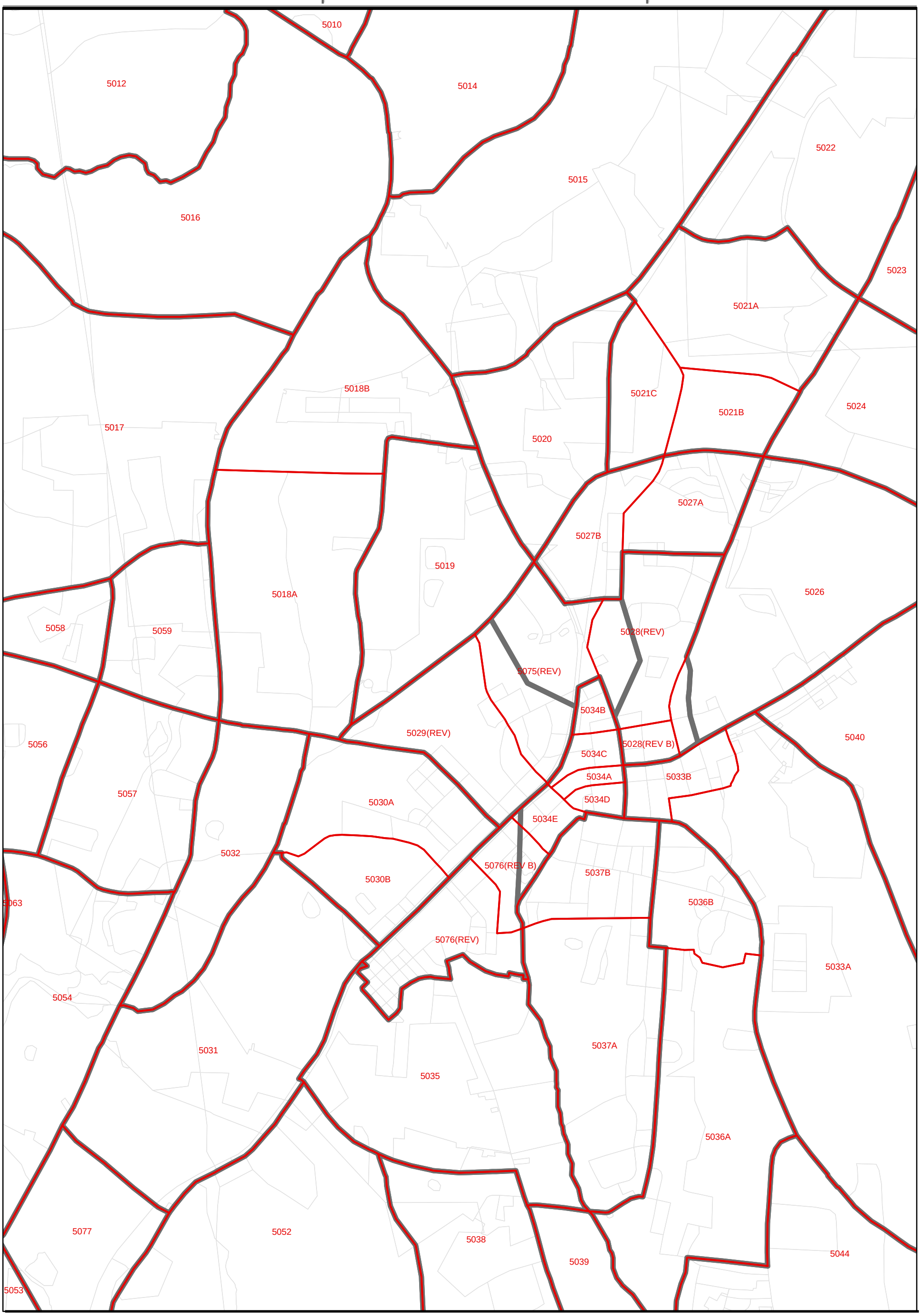

FIGURE 1: Proposed Zone Changes in Study Area

Existing Zones | Proposed Zones | Census Blocks

0 0.25 0.5 1 Miles

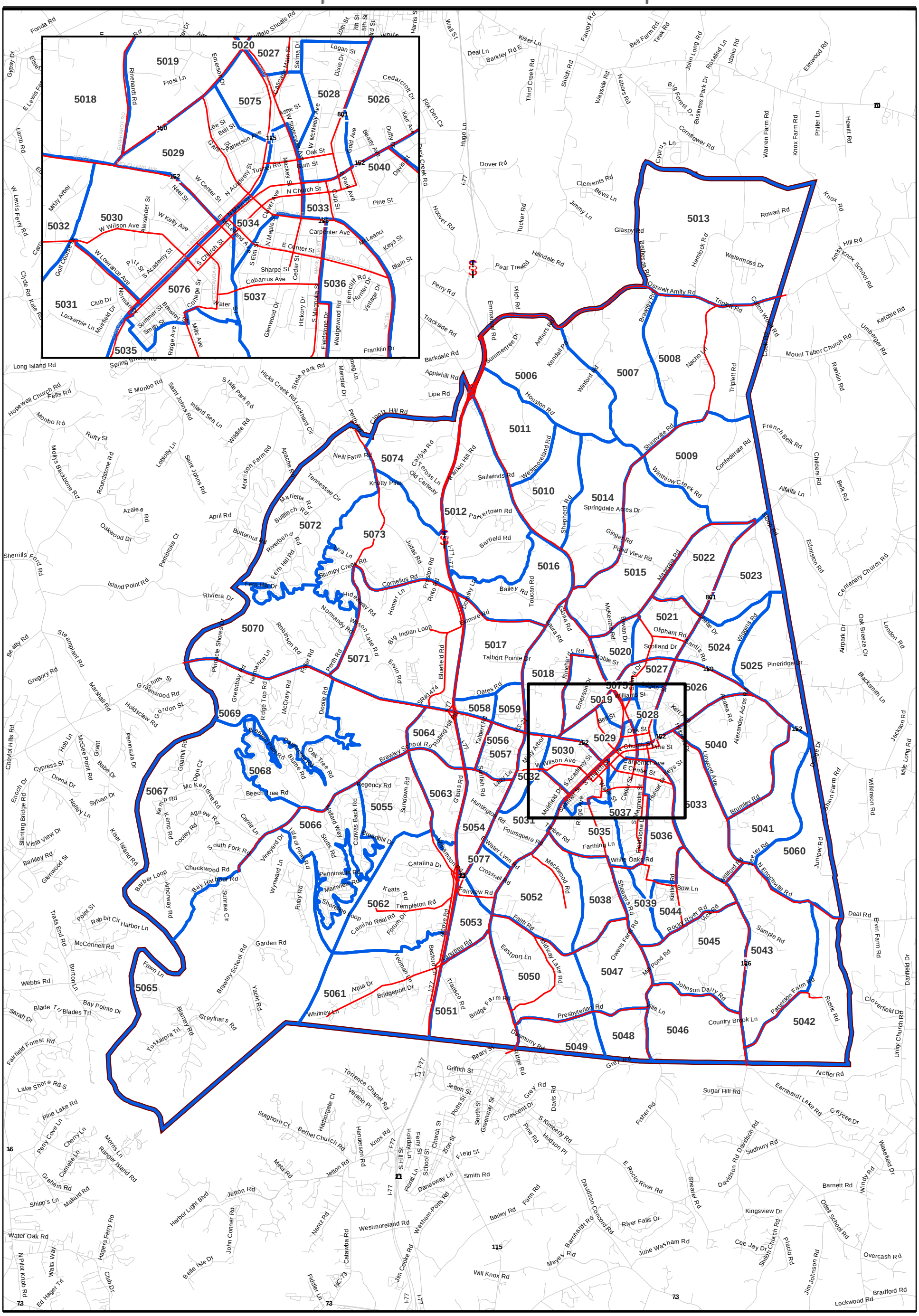

FIGURE 2: Modeled Roads and Traffic Analysis Zones

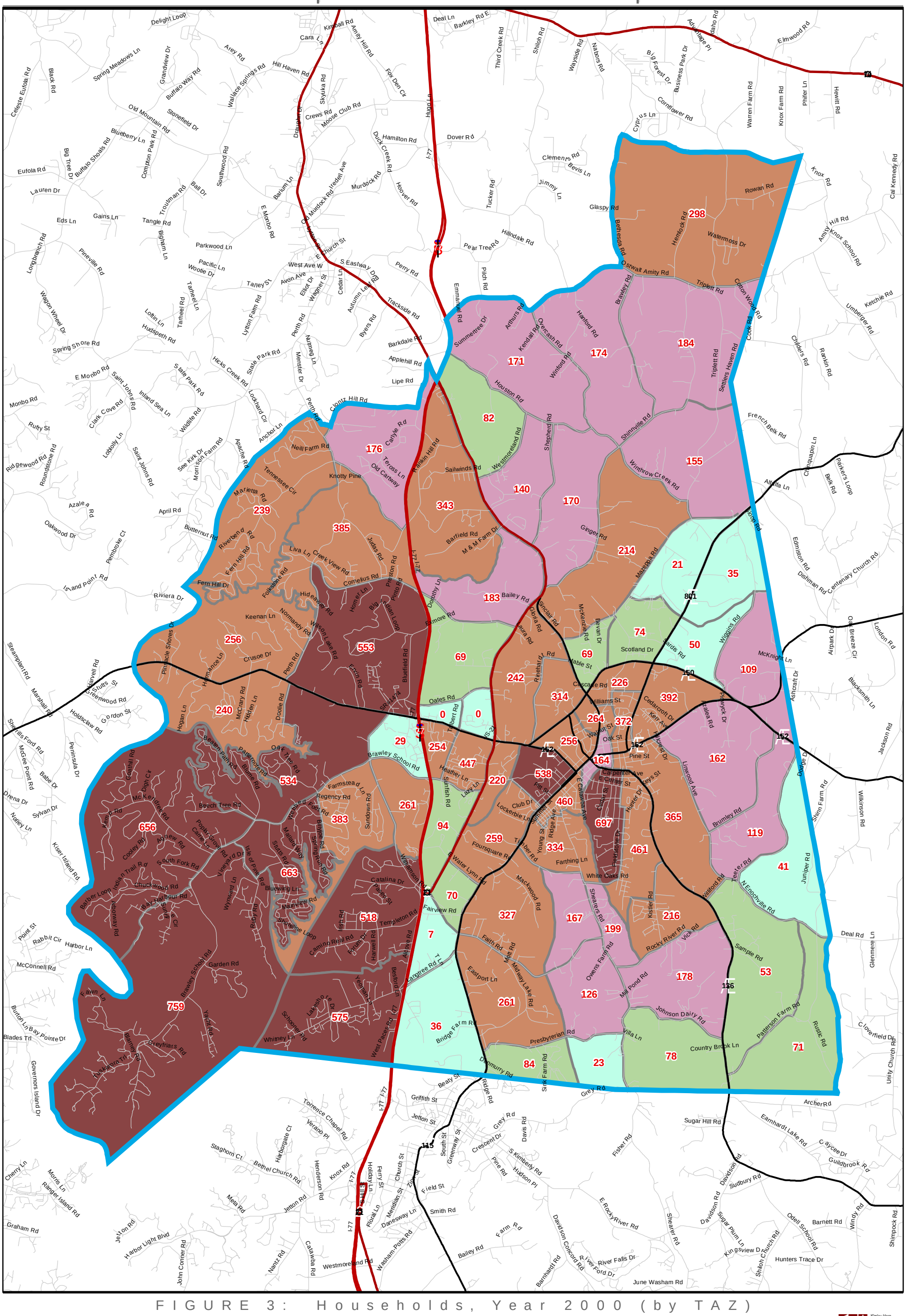

FIGURE 3: Households, Year 2000 (by TAZ)

Mooresville Comprehensive Transportation Plan

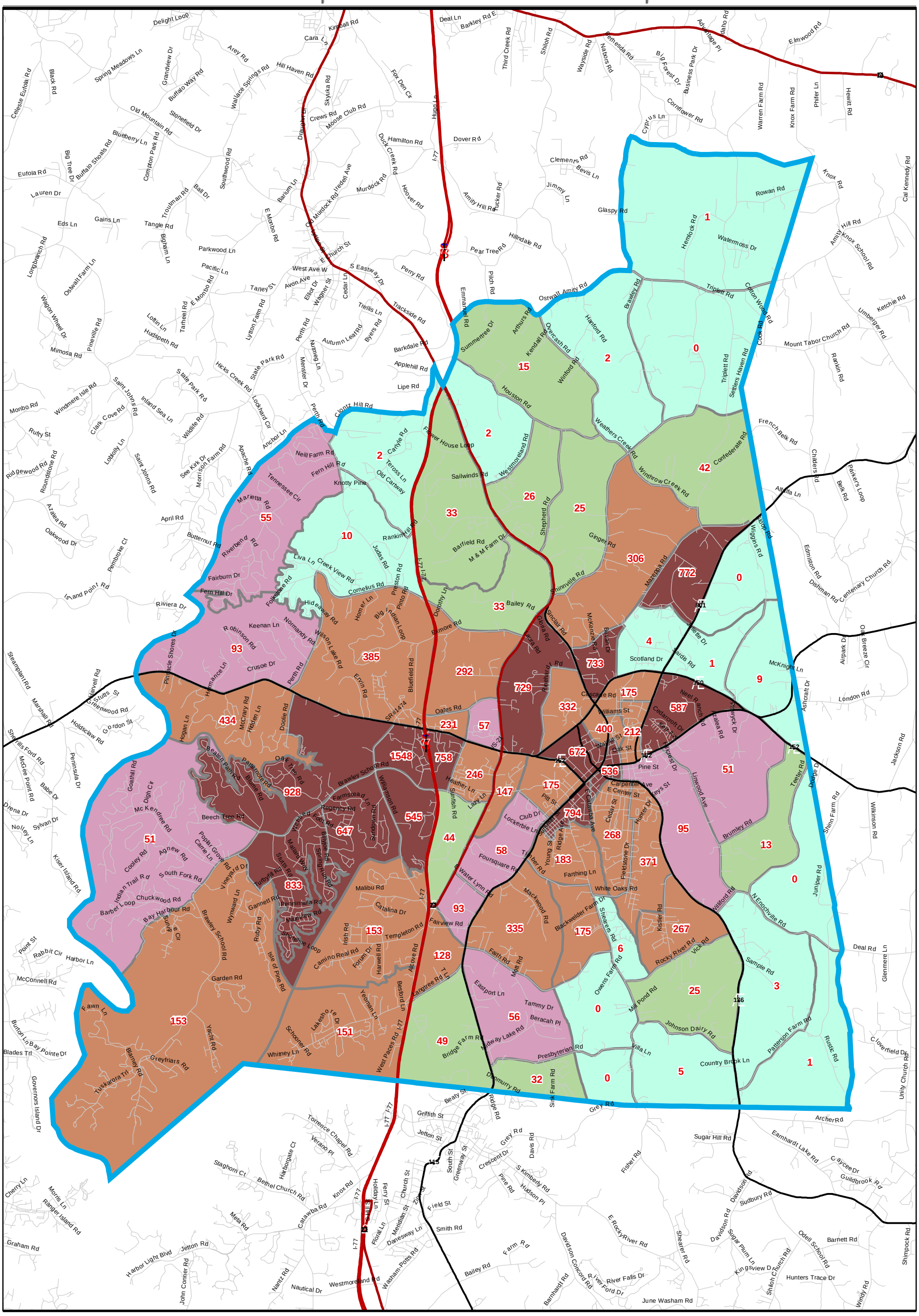

FIGURE 4: Employment in Study Area, Year 2000 (by TAZ)

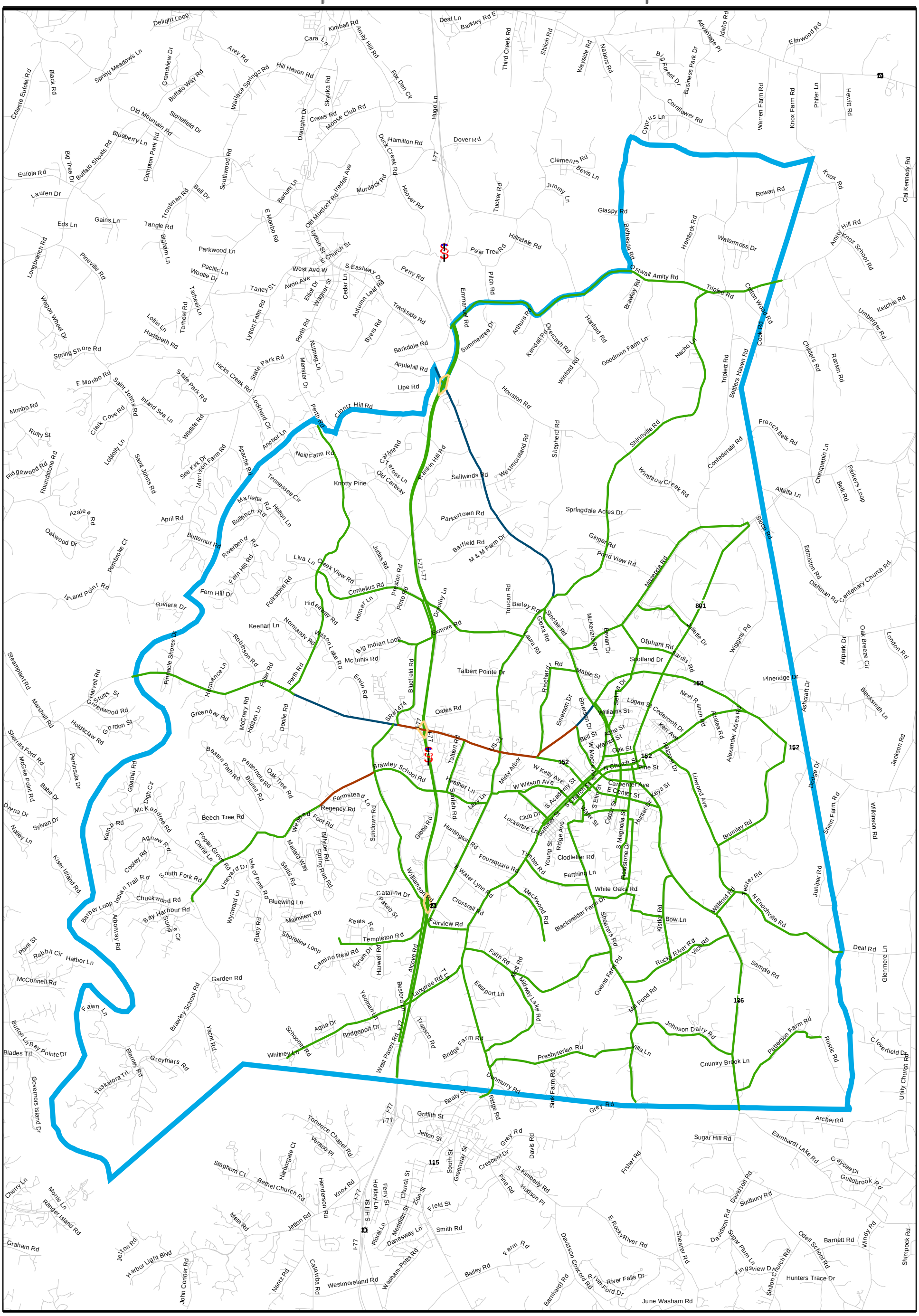

FIGURE 5: Number of Lanes on Modeled Roads

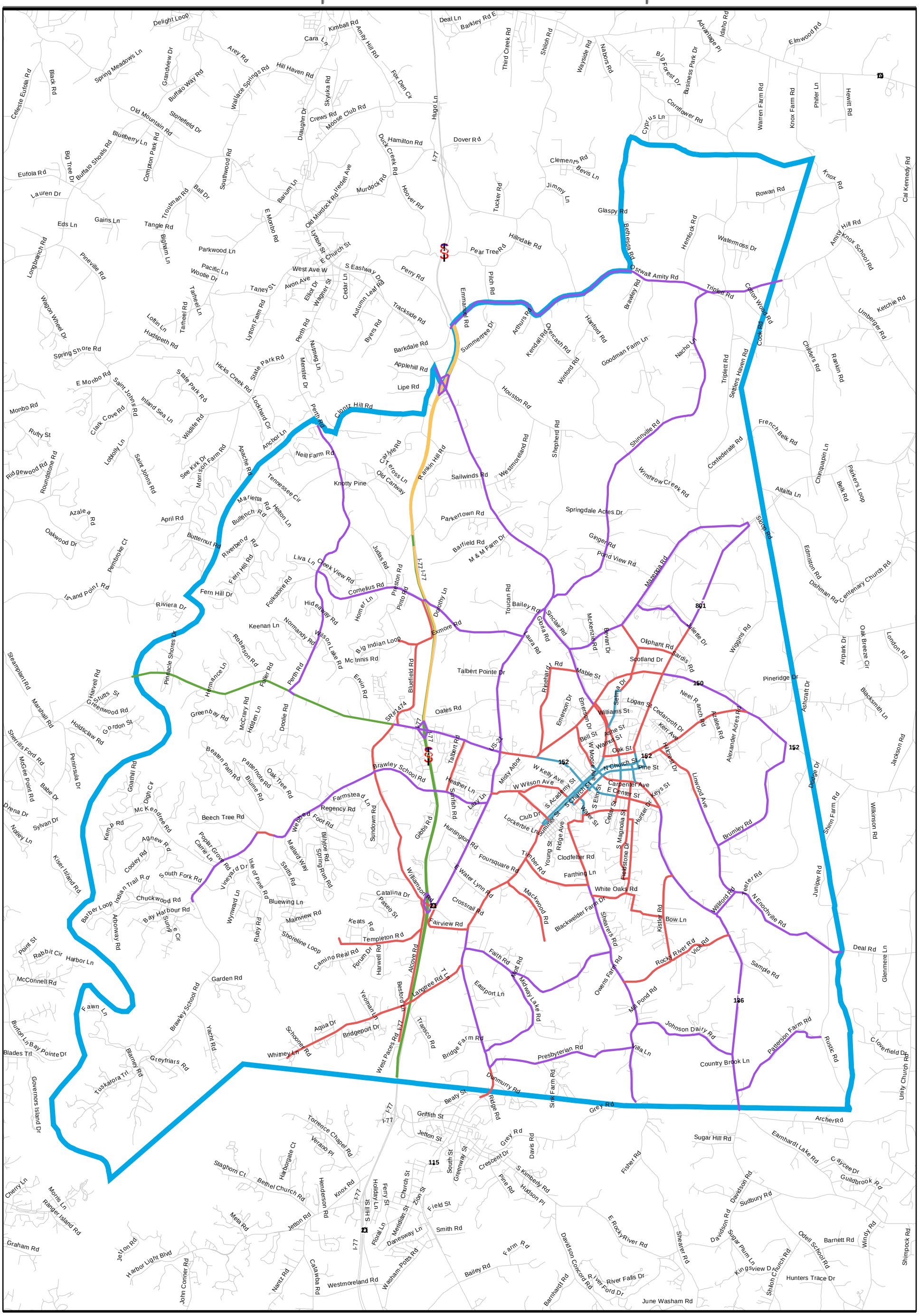

FIGURE 6: Posted Speeds on Modeled Roads

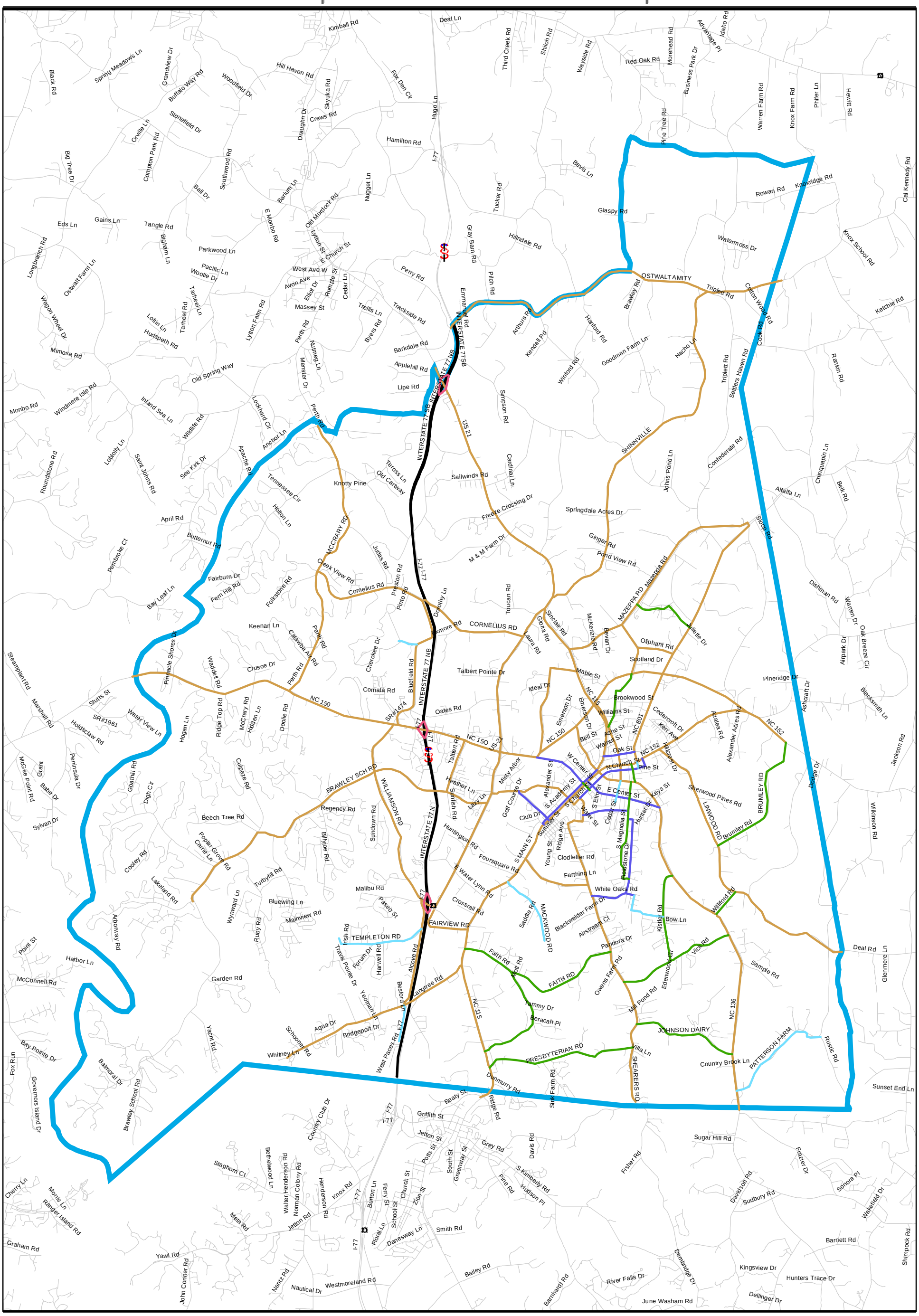

FIGURE 7: Model Functional Class on Modeled Roads

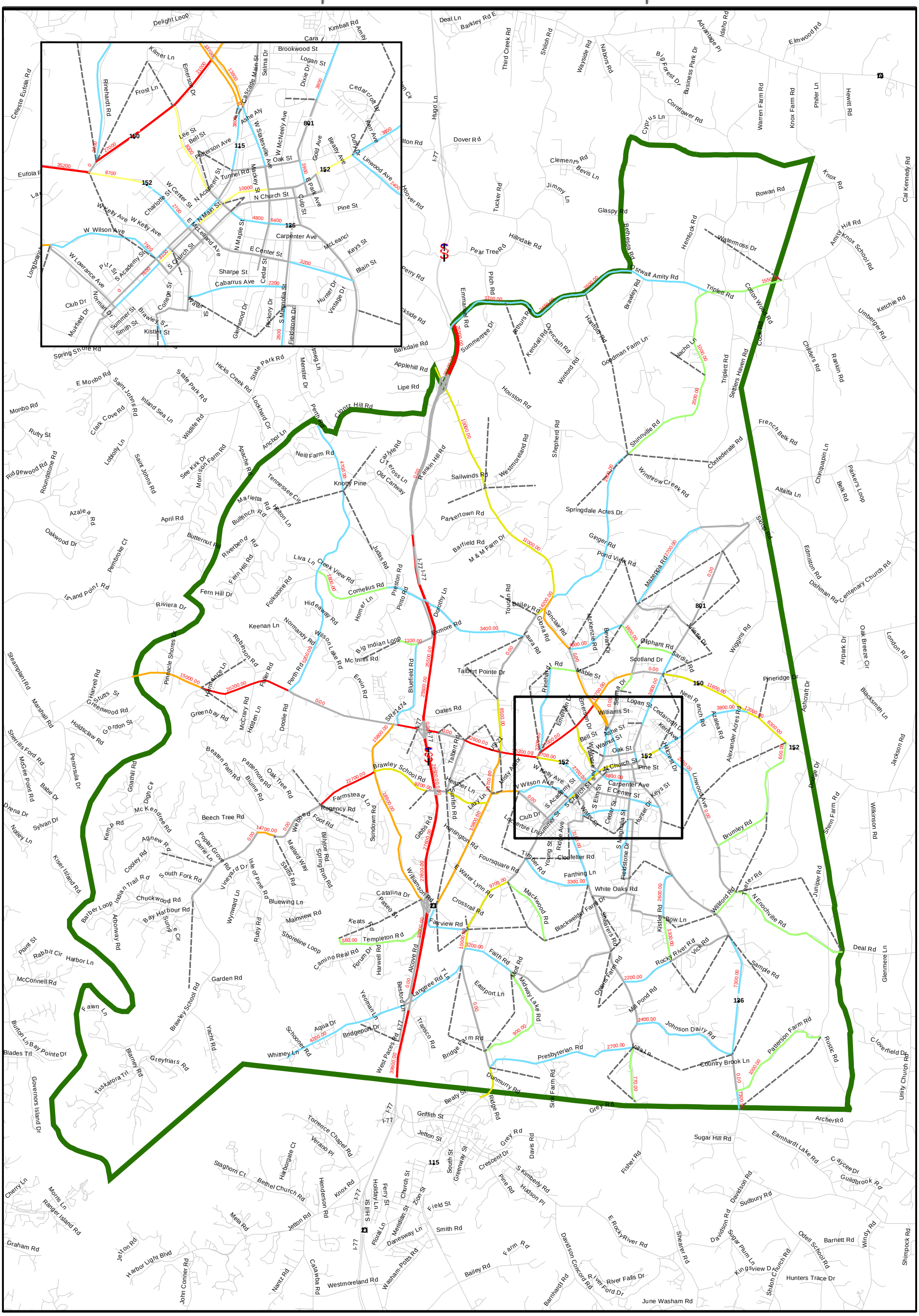

FIGURE 8: Traffic Counts on Modeled Roads

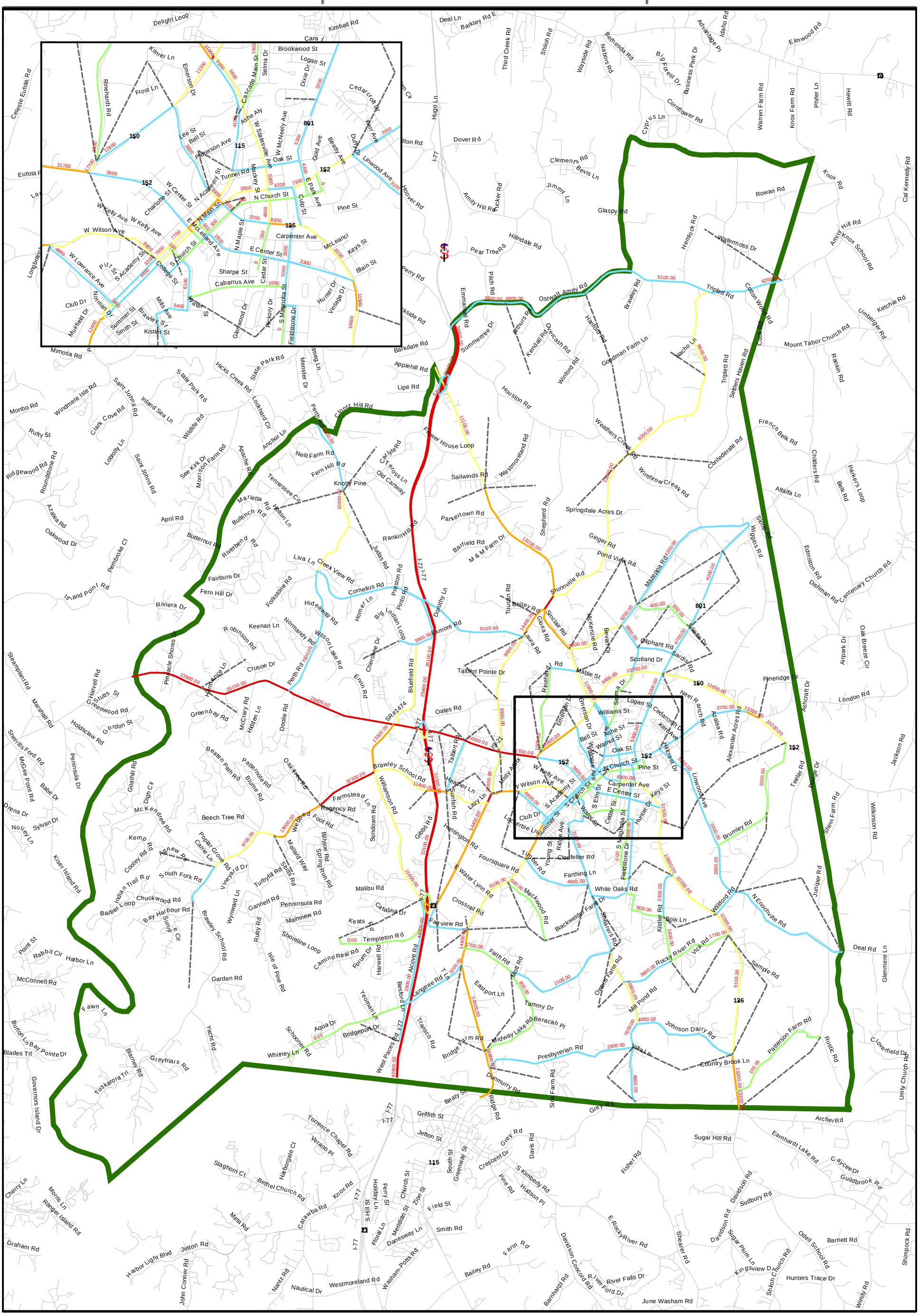

FIGURE 9: Loaded Volumes on Modeled Roads

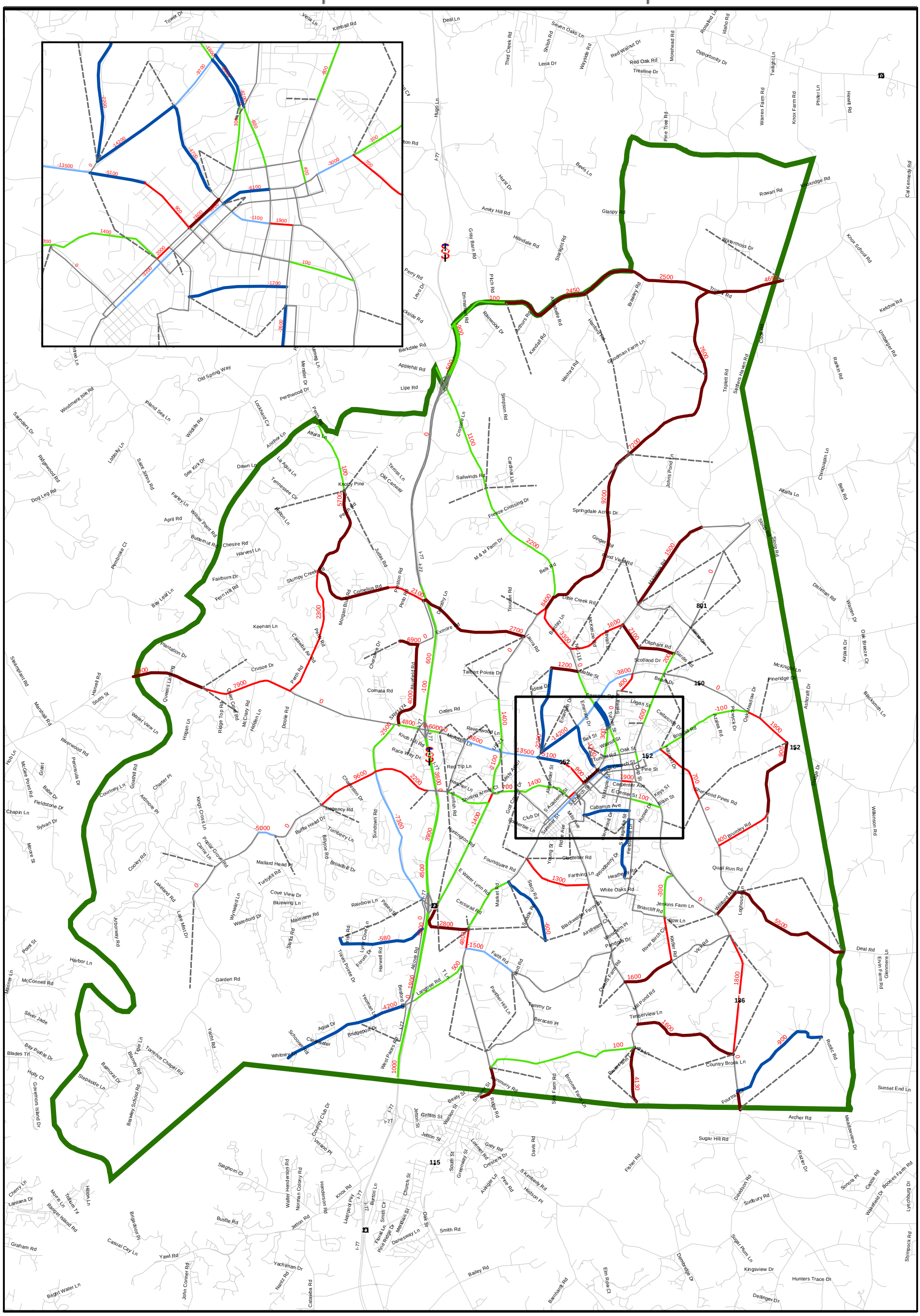

FIGURE 10: Percent Difference in Loaded Volumes

APPENDIX C
2030 Data Review Memo

Kimley-Horn
and Associates, Inc.

May 1, 2006

To: Chris Bauer, Town of Mooresville

From: Craig Gresham, Kimley-Horn and Associates, Inc.

P.O. Box 33068
Raleigh, North Carolina
27636-3068

Cc: Tim Brown, Town of Mooresville
Katherine English, NCDOT
Terry Arellano, NCDOT
Stephen Stansbery, Kimley-Horn and Associates, Inc.

Re: Metrolina Model 2030 Data Review

Dear Chris:

As mentioned in the Metrolina Model 2000 data review memo, the Metrolina model will be used to study the Mooresville Comprehensive Transportation Plan. As part of this study, we will review the assumed/observed data and model performance for both the model base year (2000) and future year (2030). The purpose of this memorandum is to present the data within the 2030 future year for review by the model team for use in the subarea model analysis. *It is extremely important that the project team review the forecasted housing and employment data for accuracy and reasonableness.*

Attached are eight maps showing data and attributes of the current regional model that we would like you to consider and review for accuracy and appropriateness. We have divided the 2030 model data review into three tasks:

1. Review model future year (2030) housing and employment data
2. Review future year model network structure and attributes
3. Review future year model loadings in Mooresville study area

As a point of reference, **Figure 1** (Modeled Roads and Traffic Analysis Zones) showing the modeled roadways in relation to the TAZ's can be found in the appendix.

Task 1. Review of model future year (2030) housing and employment data

The first item of review for the future year model was the forecasted regional model data in the Mooresville area. These forecasts, put together by the MPO with input from local planning agencies throughout the region, forecast housing and employment to the year 2030. In the Mooresville area, housing and employment are both projected to grow at a considerable pace from 2000 to 2030. **Table 1** shows the total population, households and employment in the study area for 2000 and 2030, along with the growth between the two years. The largest household growth is projected to occur west of I-77 where almost 10,000 new households are forecasted. The largest employment growth is projected to occur along the I-77 corridor. High growth is forecasted along NC 150 and NC 115 as well.

Tables 2 and 3 show population, household and employment data by TAZ. The same data can be seen spatially on **Figure 2** (Household Growth, Year 2000 to 2030 by TAZ), **Figure 3** (Percent Household Growth, Year 2000 to 2030 by TAZ), **Figure 4** (Employment Growth, Year 2000 to 2030 by TAZ) and **Figure 5** (Percent Employment Growth, Year 2000 to 2030 by TAZ) in the appendix.

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Table 1. 2000 and 2030 Population and Employment Data

	2000	2030	2000-2030 Growth	2000-2030 Percent Growth
Total Population	45,377	110,172	64,795	143%
Total HH	17,345	42,961	25,616	148%
Persons/HH	2.62	2.56	NA	NA
Total Employment	16,593	61,829	45,236	273%
Emp/Pop Ratio	0.37	0.56	NA	NA

Task 2. Review of network structure and attributes

As the 2030 model network is built from the same master network as the 2000 model, large differences should not be expected. Future year projects are stored within the master geography file and "called" by the model for implementation based on the project completion date. A comparison of the 2030 model network with the 2000 model network showed no differences in speed limit and minor differences in the number of lanes. Additional lanes are shown on I-77, NC 150 and along Brawley School Road. The location of additional lanes can be seen on **Figure 6** (Additional Lanes on Modeled Roads, Year 2000 to Year 2030).

Task 3. Review future year model loadings in Mooresville study area

Model volumes can be seen on **Figure 7** (Loaded Volumes on Modeled Roads, Year 2030) in the appendix. The amount of traffic growth between 2000 and 2030 can be seen on **Figure 8** (Volume Differences on Modeled Roads, Year 2000 to 2030) in the appendix. As expected, the model volumes increase substantially in the areas surrounding large pockets of growth, including I-77, River Highway, Brawley School Road, and Langtree Road.

Conclusions

The Metrolina model appears to be reasonable with regards to forecasted socioeconomic data, but could use review by Mooresville staff to determine if housing and employment growth is located in the area properly. There are minimal highway projects shown in the model to date, which may be unreasonable with the growth that is forecasted in the region. This issue will be explored in more depth during the subarea model analysis.

Please review the tables and included maps for reasonableness and accuracy and submit them back to us by May 19th, 2006 for inclusion in the subarea model. If you have any questions, please do not hesitate to call me at 919-677-2127

Sincerely,

Craig Gresham, P.E., AICP
Kimley-Horn and Associates, Inc.
3001 Weston Parkway
Cary, NC, 27513

Table 2. 2000 and 2030 Population and Household Data by TAZ										
	2000			2030			2000-2030 Growth		2000-2030 Percent Growth	
TAZ	Population	Households	Persons/HH	Population	Households	Persons/HH	Population	Households	Population	Households
5006	457	171	2.67	1329	519	2.56	872	348	191%	204%
5007	442	174	2.54	1336	522	2.56	894	348	202%	200%
5008	505	184	2.74	1362	532	2.56	857	348	170%	189%
5009	408	155	2.63	1288	503	2.56	880	348	216%	225%
5010	396	140	2.83	1395	545	2.56	999	405	252%	289%
5011	204	82	2.49	1249	488	2.56	1045	406	512%	495%
5012	999	343	2.91	1915	748	2.56	916	405	92%	118%
5013	810	298	2.72	993	388	2.56	183	90	23%	30%
5014	454	170	2.67	1600	625	2.56	1146	455	252%	268%
5015	546	214	2.55	1843	720	2.56	1297	506	238%	236%
5016	487	183	2.66	1633	638	2.56	1146	455	235%	249%
5017	208	69	3.01	955	373	2.56	747	304	359%	441%
5018	617	242	2.55	1395	545	2.56	778	303	126%	125%
5019	758	314	2.41	1098	429	2.56	340	115	45%	37%
5020	161	69	2.33	471	184	2.56	310	115	193%	167%
5021	184	74	2.49	1439	562	2.56	1255	488	682%	659%
5022	43	21	2.05	1221	477	2.56	1178	456	2740%	2171%
5023	91	35	2.60	579	226	2.56	488	191	536%	546%
5024	128	50	2.56	617	241	2.56	489	191	382%	382%
5025	306	109	2.81	671	262	2.56	365	153	119%	140%
5026	943	392	2.41	2168	847	2.56	1225	455	130%	116%
5027	632	226	2.80	873	341	2.56	241	115	38%	51%
5028	902	372	2.42	1105	431	2.56	203	59	23%	16%
5029	708	256	2.77	814	329	2.47	106	73	15%	29%
5030	1366	538	2.54	1864	728	2.56	498	190	36%	35%
5031	758	259	2.93	1247	487	2.56	489	228	65%	88%
5032	556	220	2.53	1229	480	2.56	673	260	121%	118%
5033	849	365	2.33	2181	852	2.56	1332	487	157%	133%
5034	342	164	2.09	450	180	2.50	108	16	32%	10%
5035	722	334	2.16	1436	561	2.56	714	227	99%	68%
5036	1299	461	2.82	2455	935	2.63	1156	474	89%	103%
5037	1875	697	2.69	2094	788	2.66	219	91	12%	13%
5038	477	167	2.86	1916	740	2.59	1439	573	302%	343%
5039	611	199	3.07	1920	750	2.56	1309	551	214%	277%
5040	454	162	2.80	806	315	2.56	352	153	78%	94%
5041	341	119	2.87	696	272	2.56	355	153	104%	129%

Table 2. 2000 and 2030 Population and Household Data by TAZ (continued)										
	2000			2030			2000-2030 Growth		2000-2030 Percent Growth	
TAZ	Population	Households	Persons/HH	Population	Households	Persons/HH	Population	Households	Population	Households
5042	188	71	2.65	637	249	2.56	449	178	239%	251%
5043	146	53	2.75	591	231	2.56	445	178	305%	336%
5044	650	216	3.01	1800	703	2.56	1150	487	177%	225%
5045	493	178	2.77	1669	652	2.56	1176	474	239%	266%
5046	209	78	2.68	655	256	2.56	446	178	213%	228%
5047	349	126	2.77	1741	680	2.56	1392	554	399%	440%
5048	60	23	2.61	515	201	2.56	455	178	758%	774%
5049	225	84	2.68	671	262	2.56	446	178	198%	212%
5050	665	261	2.55	1920	750	2.56	1255	489	189%	187%
5051	77	36	2.14	1408	550	2.56	1331	514	1729%	1428%
5052	834	327	2.55	1946	760	2.56	1112	433	133%	132%
5053	13	7	1.86	844	326	2.59	831	319	6392%	4557%
5054	290	94	3.09	1219	468	2.60	929	374	320%	398%
5055	1034	383	2.70	2752	1075	2.56	1718	692	166%	181%
5056	476	254	1.87	753	294	2.56	277	40	58%	16%
5057	1211	447	2.71	1436	561	2.56	225	114	19%	26%
5058	0	0	NA	102	40	2.55	102	40	NA	NA
5059	0	0	NA	164	64	2.56	164	64	NA	NA
5060	104	41	2.54	497	194	2.56	393	153	378%	373%
5061	1447	575	2.52	3328	1300	2.56	1881	725	130%	126%
5062	1308	518	2.53	2944	1150	2.56	1636	632	125%	122%
5063	785	261	3.01	2176	850	2.56	1391	589	177%	226%
5064	65	29	2.24	1096	428	2.56	1031	399	1586%	1376%
5065	2092	759	2.76	3968	1550	2.56	1876	791	90%	104%
5066	1601	663	2.41	3456	1350	2.56	1855	687	116%	104%
5067	1705	656	2.60	3840	1500	2.56	2135	844	125%	129%
5068	1462	534	2.74	3200	1250	2.56	1738	716	119%	134%
5069	582	240	2.43	2560	1000	2.56	1978	760	340%	317%
5070	649	256	2.54	2240	875	2.56	1591	619	245%	242%
5071	1532	553	2.77	3021	1180	2.56	1489	627	97%	113%
5072	574	239	2.40	2304	900	2.56	1730	661	301%	277%
5073	1045	385	2.71	2432	950	2.56	1387	565	133%	147%
5074	496	176	2.82	1037	405	2.56	541	229	109%	130%
5075	719	264	2.72	815	307	2.65	96	43	13%	16%
5076	1091	460	2.37	1255	483	2.60	164	23	15%	5%
5077	161	70	2.30	1537	604	2.54	1376	534	855%	763%

Table 3. 2000 and 2030 Employment Data by TAZ				
TAZ	2000 Employment	2030 Employment	2000-2030 Growth	2000-2030 Percent Growth
5006	15	174	159	1060%
5007	2	305	303	15150%
5008	0	35	35	NA
5009	42	175	133	317%
5010	26	330	304	1169%
5011	2	551	549	27450%
5012	33	769	736	2230%
5013	1	45	44	4400%
5014	25	404	379	1516%
5015	306	1112	806	263%
5016	33	637	604	1830%
5017	292	1356	1064	364%
5018	729	1541	812	111%
5019	332	1075	743	224%
5020	733	1189	456	62%
5021	4	599	595	14875%
5022	772	1524	752	97%
5023	0	291	291	NA
5024	1	76	75	7500%
5025	9	174	165	1833%
5026	587	1060	473	81%
5027	175	551	376	215%
5028	212	770	558	263%
5029	672	1526	854	127%
5030	175	627	452	258%
5031	58	702	644	1110%
5032	147	383	236	161%
5033	95	552	457	481%
5034	536	845	309	58%
5035	183	928	745	407%
5036	371	1032	661	178%
5037	268	981	713	266%
5038	175	493	318	182%
5039	6	57	51	850%
5040	51	457	406	796%
5041	13	51	38	292%
5042	1	116	115	11500%
5043	3	301	298	9933%
5044	267	525	258	97%
5045	25	651	626	2504%
5046	5	350	345	6900%
5047	0	46	46	NA
5048	0	43	43	NA

Table 3. 2000 and 2030 Employment Data by TAZ (continued)				
TAZ	2000 Employment	2030 Employment	2000-2030 Growth	2000-2030 Percent Growth
5049	32	199	167	522%
5050	56	792	736	1314%
5051	49	1821	1772	3616%
5052	335	1946	1611	481%
5053	128	4999	4871	3805%
5054	44	581	537	1220%
5055	647	1427	780	121%
5056	758	1182	424	56%
5057	246	514	268	109%
5058	231	547	316	137%
5059	57	414	357	626%
5060	0	121	121	NA
5061	151	829	678	449%
5062	153	821	668	437%
5063	545	1435	890	163%
5064	1548	2976	1428	92%
5065	153	722	569	372%
5066	833	1494	661	79%
5067	51	337	286	561%
5068	928	2717	1789	193%
5069	434	1797	1363	314%
5070	93	780	687	739%
5071	385	1195	810	210%
5072	55	194	139	253%
5073	10	292	282	2820%
5074	2	512	510	25500%
5075	400	867	467	117%
5076	794	1250	456	57%
5077	93	3659	3566	3834%

APPENDIX

Mooresville Comprehensive Transportation Plan

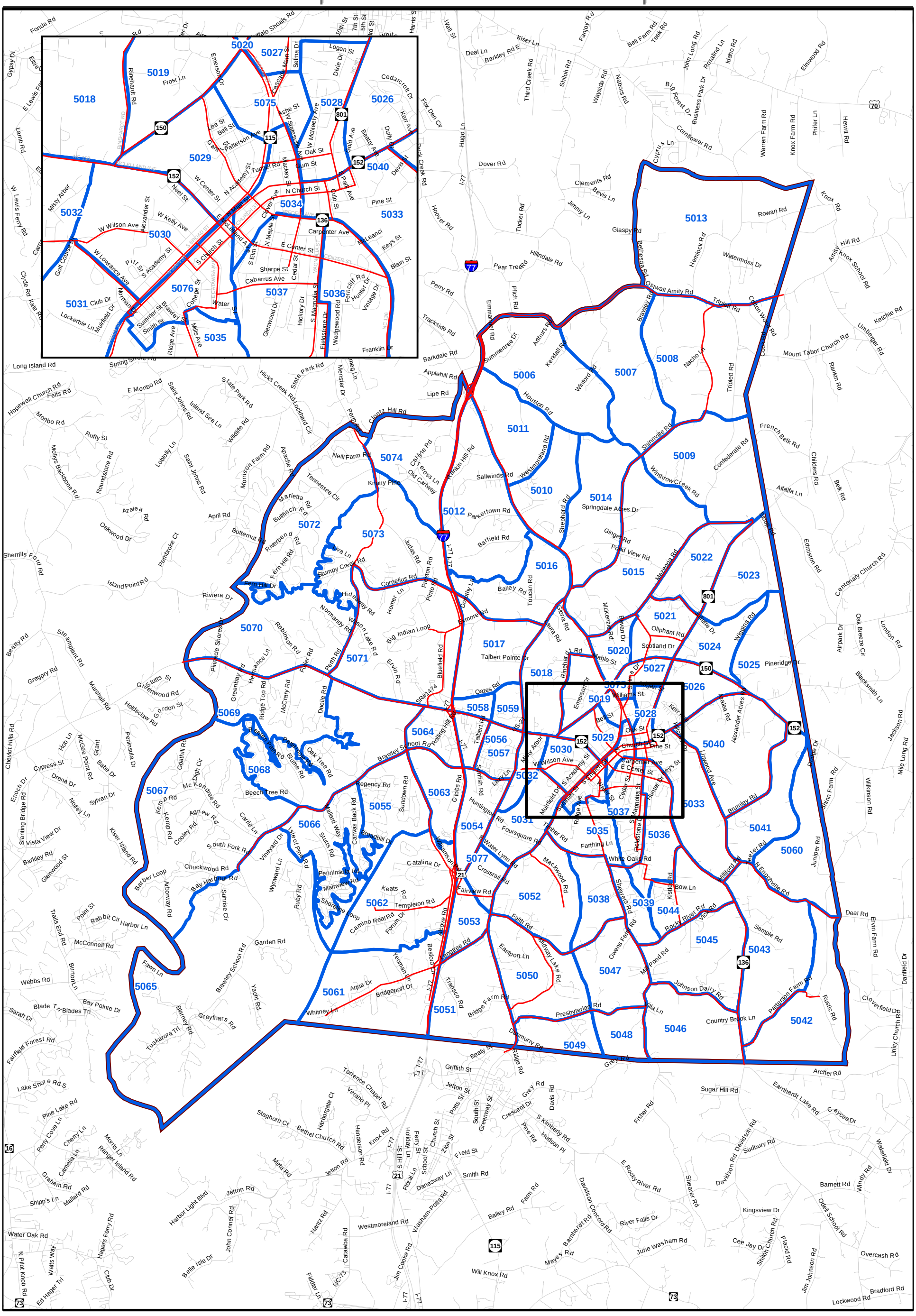


FIGURE 1: Modeled Roads and Traffic Analysis Zones

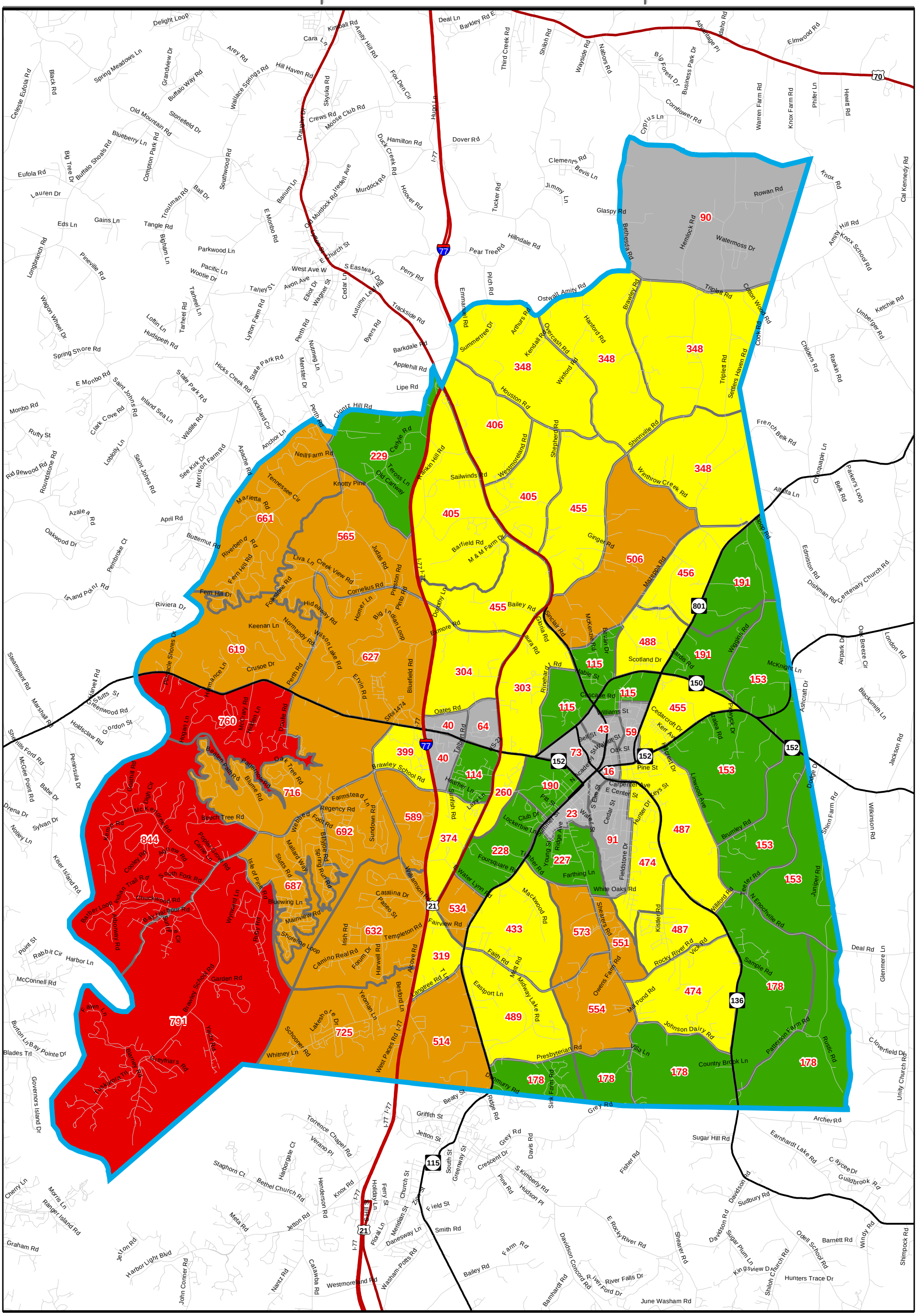


Figure 2: Household Growth, Year 2000 to 2030 (by TAZ)

Kimley-Horn and Associates, Inc.

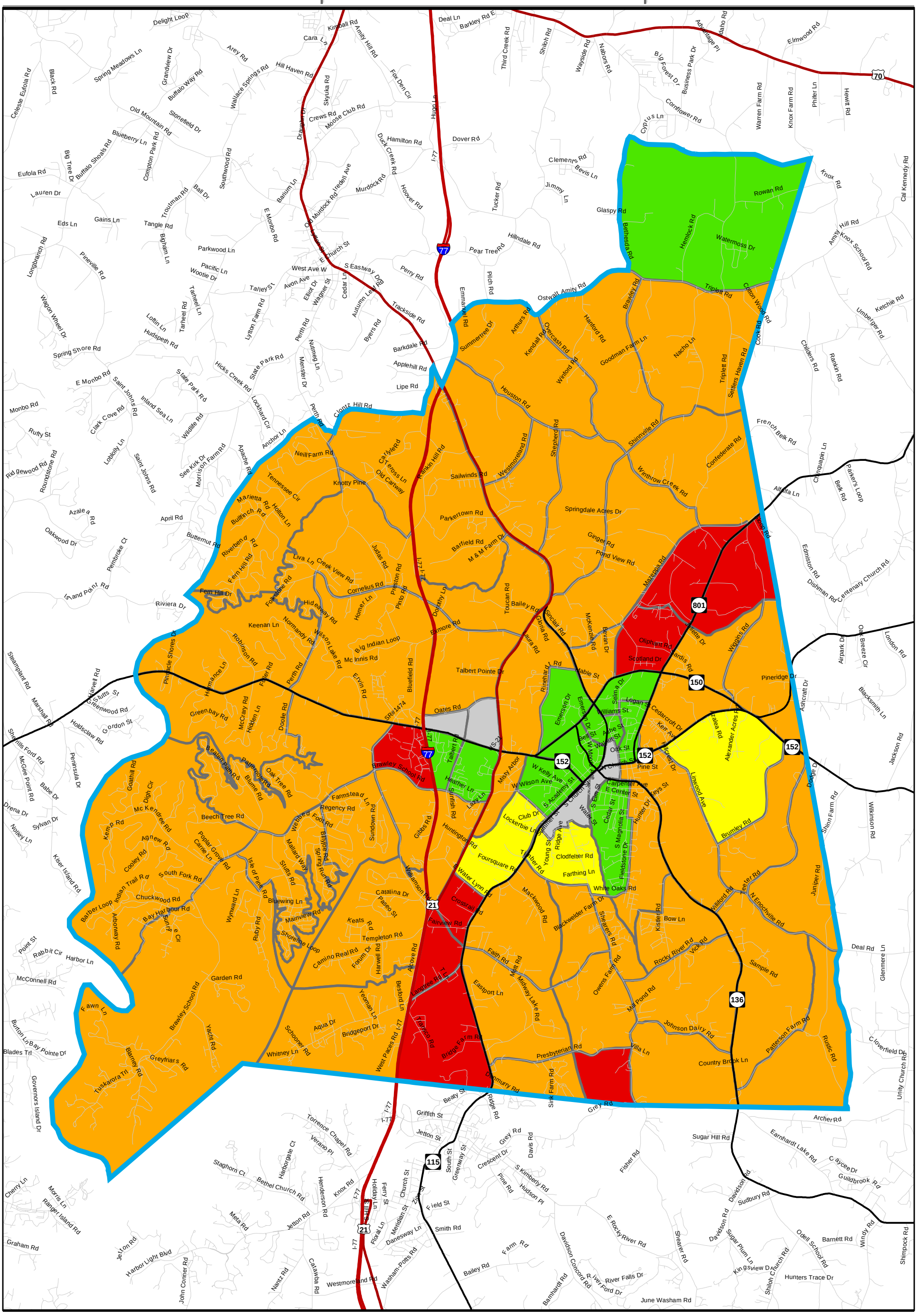


Figure 3: Percent Household Growth, Year 2000 to 2030 (by TAZ)

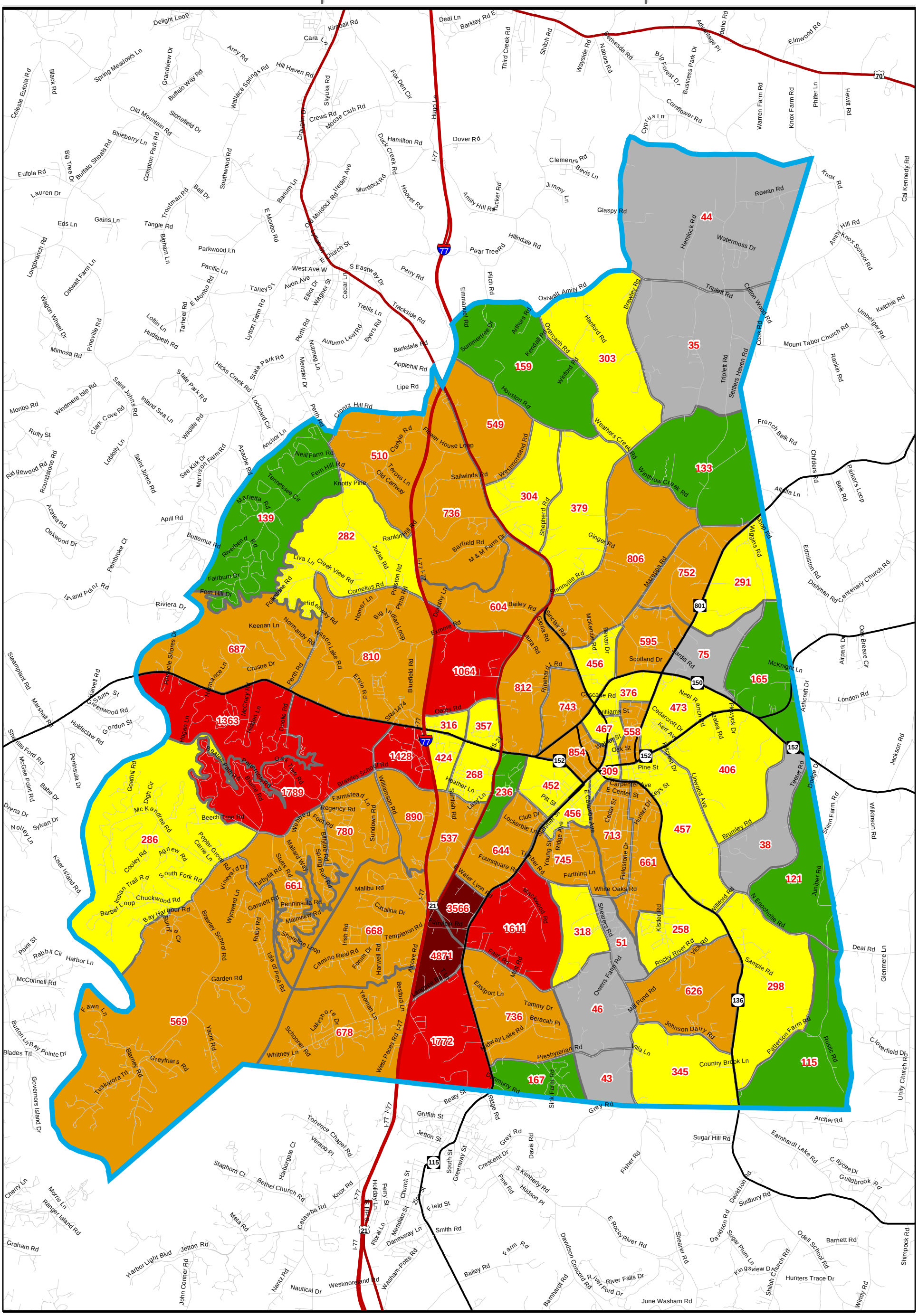


Figure 4: Employment Growth, Year 2000 to 2030 (by TAZ)

Kimley-Horn and Associates, Inc.

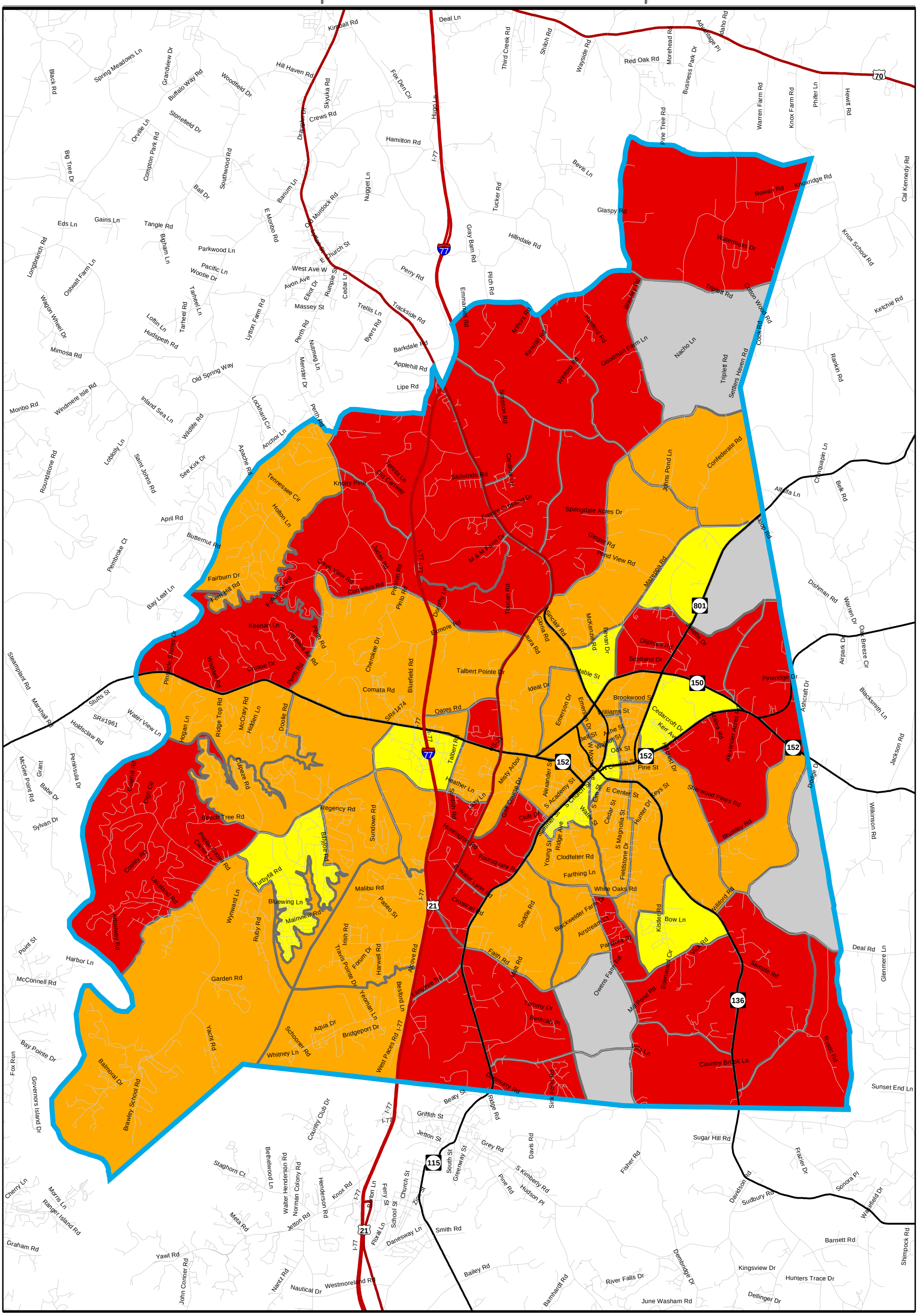


Figure 5: Percent Employment Growth, Year 2000 to 2030 (by TAZ)

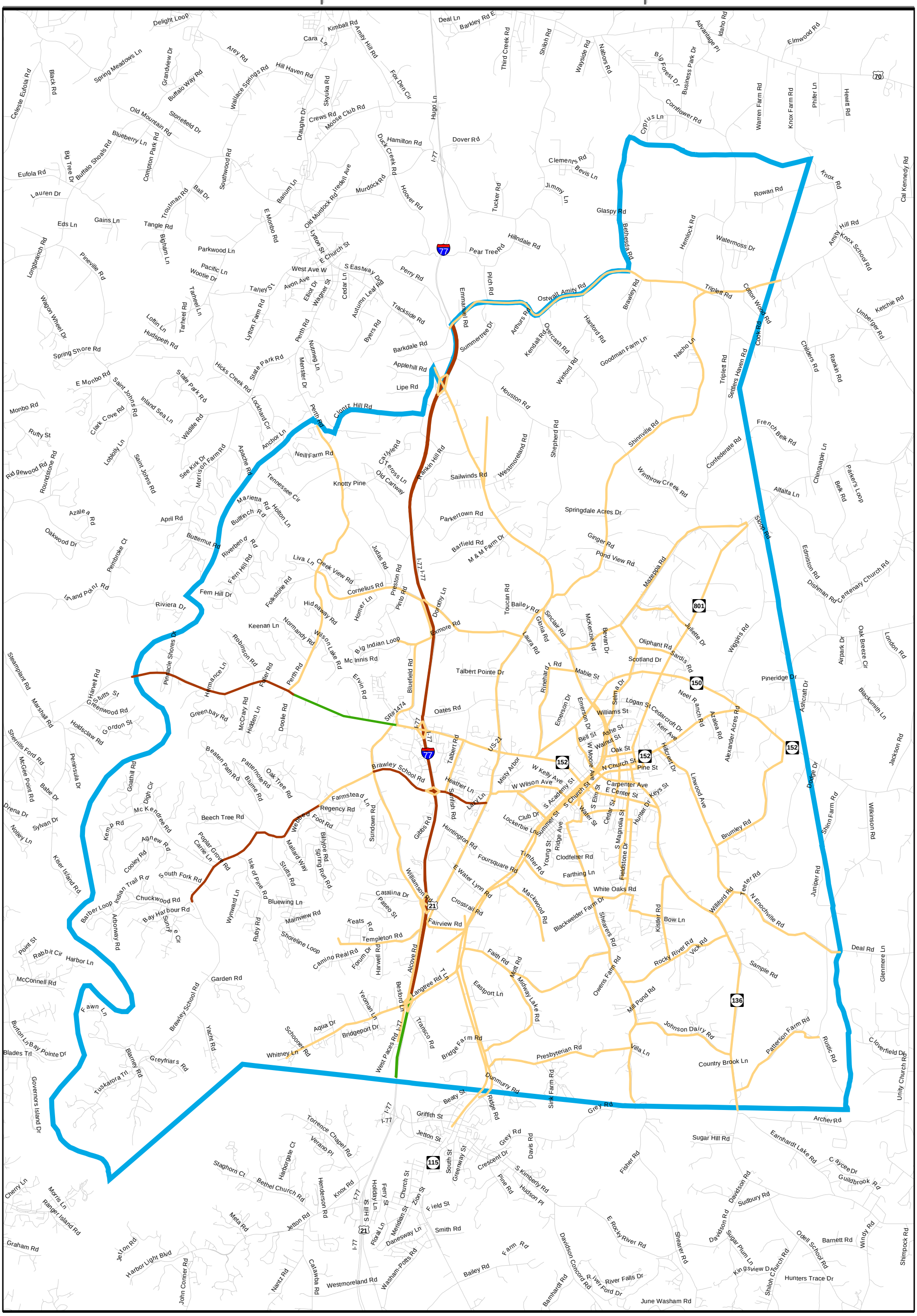


Figure 6: New Lanes on Modeled Roads, Year 2000 to Year 2030

Kimley-Horn and Associates, Inc.

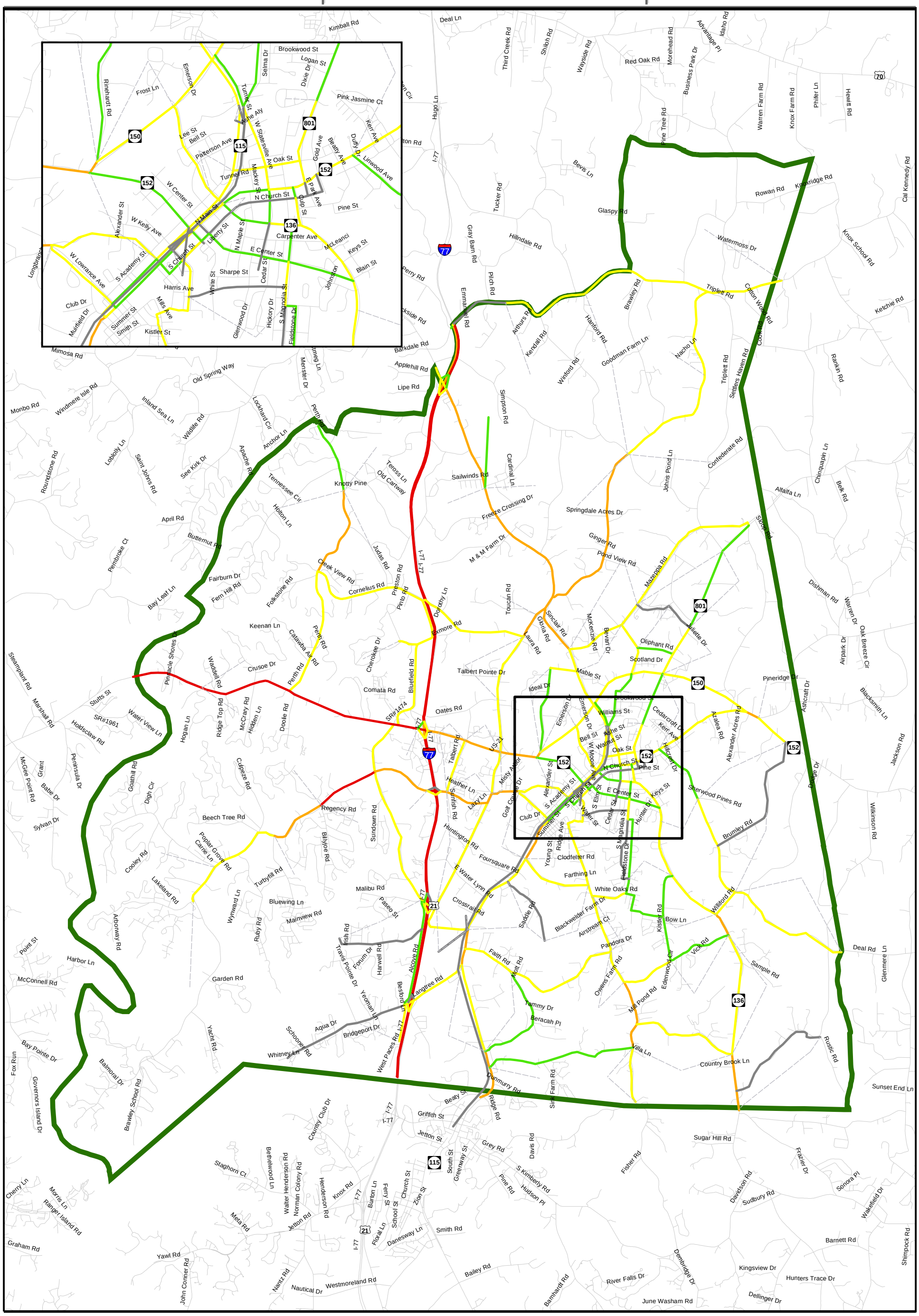


Figure 7: Loaded Volumes on Modeled Roads, Year 2030

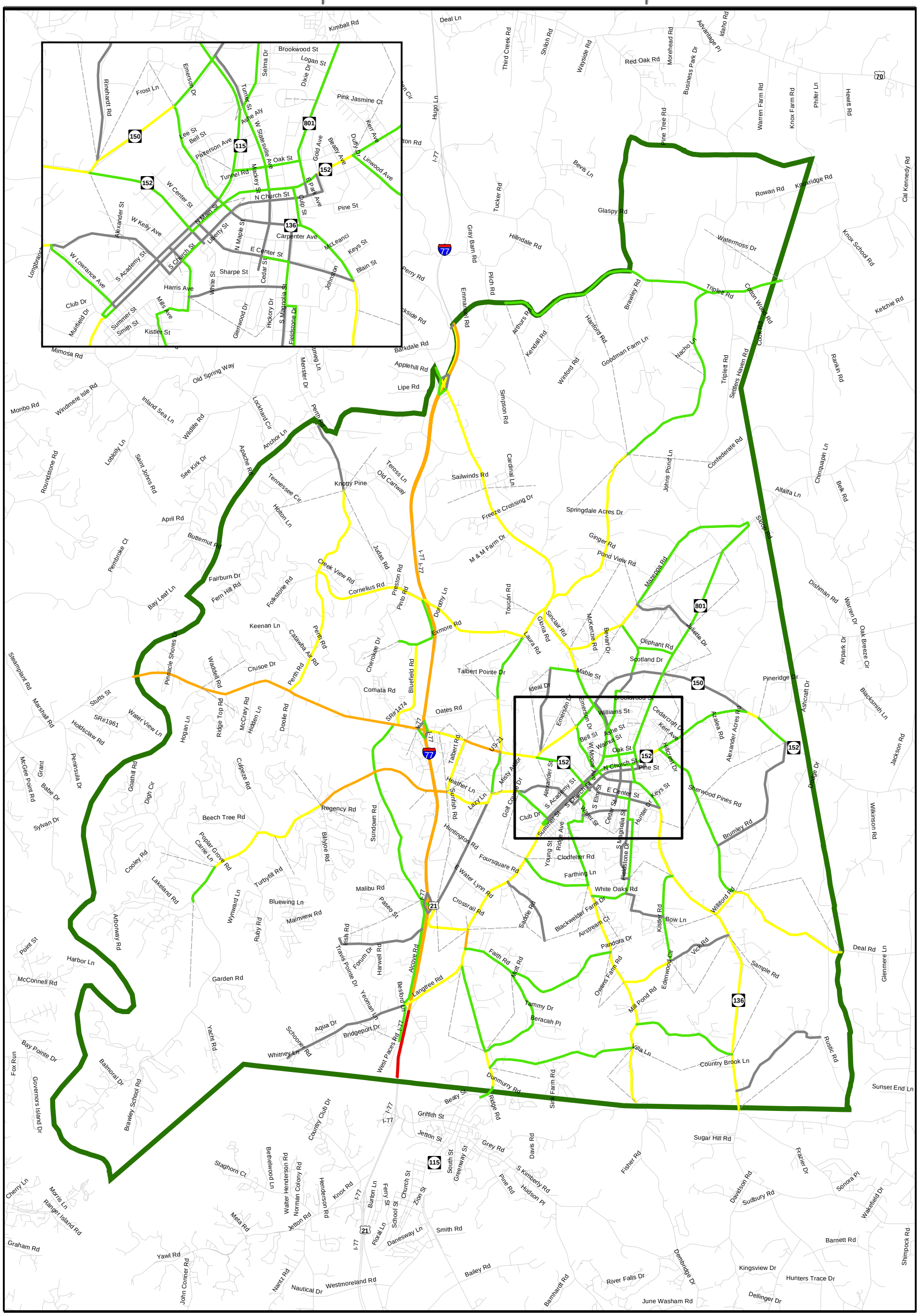


Figure 8: Volume Growth on Modeled Roads, Year 2000 to 2030

APPENDIX D
Response to 2030 Memo Comments

Kimley-Horn and Associates, Inc.

Memorandum

P.O. Box 33068
Raleigh, North Carolina
27636-3068

Date: June 27, 2006

To: Katherine English, NCDOT

From: Craig Gresham, Kimley-Horn and Associates, Inc.

Cc: Chris Bauer, Town of Mooresville
Terry Arellano, NCDOT
Rhett Fussell, NCDOT
Stephen Stansbery, Kimley-Horn and Associates, Inc.

Subject: Metrolina Model 2030 Data Review Reponses

Dear Katherine:

We have reviewed NCDOT's responses to the Metrolina Model 2030 Data Review and have prepared responses to each of the questions, which area attached in the following pages. There are several action items that will need further follow-up within Kimley-Horn and the Town of Morrisville, which are identified at the end of the responses. Please let me know if you need further information that has not been addressed or noted for follow-up.

Sincerely,
Craig Gresham
Kimley-Horn and Associates, Inc.

TEL 919 677 2000
FAX 919 677 2050

QUESTIONS AND REPONSES

1. Page 2 of the letter: Total employment for 2030 seems very high. Is this due to Lowes?

We do not have the specific forecasted employment information (names of businesses) for any of the zones. The 61,829 employees reported in 2030 is simply the sum of the total employees for the zones in the study area. Considerable growth is anticipated in the area, and a 4% growth rate per year is high but feasible.

2. The first sentence of the first paragraph states that large differences should not be expected. Large differences in what?

The 2030 network should be the same as the 2000 network with the exception of added lanes and new projects.

3. Table 3: Does annual percent growth make more sense instead of the 2000-2030 percent growth? Some of the percent growths are in the thousands.

The table has been revised to reflect annual percent growth.

4. Table 3: Is the 2030 employment number for TAZ 5053 Lowes?

We do not have the specific forecasted employment information (names of businesses) for any of the zones. We can check with Stephen Stansbery and verify the location of Lowe's and the corresponding employment.

5. Figure 1: The Mooresville downtown inset has Mcleland Ave. and Statesville Ave. that do not end at an intersection. NC 152 and NC 801 need to go out to the county line. Brawley School Road is also circled on the map by Rhett.

The Mcleland Ave. and Statesville Ave. coding is from the official model files but still doesn't make much sense. This will be corrected in the sub-area model run. NC 152 and NC 801 do go to the county line. The roads were selected using a selection set in TransCAD for a "county" field. This county field is filled for each individual link. The roads in question cross the county line but do not have a node at that point, thus they just happen to have the code for the adjacent county. Therefore, these small sections of road at the county lines are in the model, but do not show up on this specific map.

6. Figure 2: The break downs are hard to follow to see the highest growth. The break downs should be 500-750 and 750-1000.

Figure 2 has been revised to reflect these changes.

7. Figure 3: This map doesn't show a lot. The problem is that 500% can be 10 households or 100 households.

Figure 3 is designed to be viewed in conjunction with Figure 2, thus showing the number of households as well as the percent growth to try and get a complete picture. A zone growing from 10 households to 300 households could be looked at in a very different way then a zone growing from 410 households to 700 households. This would not be shown simply by looking at Figure 2 and seeing growth of 290 households.

8. Figure 4: Please define the measurement used for the employment growth. One would assume that it is measured in people, but it could be something else.

Yes, the measurement used for employment growth is the number of employees.

9. Figure 5: The TAZ at the north-eastern corner of the intersection of NC 801 and NC 150 does not reflect that there are 75 people employed. The neighboring TAZ directly east from this TAZ does not reflect 165 people employed. Is there really a 500% difference in employment?

These two zones (zones 5024 and 5025) grow from 1 employee to 76 employees (zone 5024) and from 9 employees to 174 employees (zone 5025) according to model input data.

10. Figure 6: Please verify that NC 150 from SR 1474 to I-77 interchange is coded correctly along with Brawley School Road from Williamson Road towards the west.

These figures have been sent to the Town of Mooresville for their input on these types of things.

11. Figure 7: I-77 from the Langtree interchange north to Williamson Road looks weird.

There is a service road to the west of I-77 here that does not show up well on this figure.

12. Figure 8: Please modify any centroid connector that connects to an intersection. There appear to be several that fall into this category such as Rocky River Road, Mackwood Road, and Fairview Road.

Centroid connectors will be modified as appropriate for the sub-area model run.

REMAINING ACTION ITEMS:

- Verify Employment in Zone 5053
- Verify NC-150 and Brawley School link attributes
- Revise Centroid Connectors in Subarea Model run

Table 3. 2000 and 2030 Employment Data by TAZ					
TAZ	**2000 Employment**	**2030 Employment**	**2000-2030 Growth**	**2000-2030 Percent Growth**	**Percent Gowth Per Year**
5006	15	174	159	1060%	9%
5007	2	305	303	15150%	18%
5008	0	35	35	NA	NA
5009	42	175	133	317%	5%
5010	26	330	304	1169%	9%
5011	2	551	549	27450%	21%
5012	33	769	736	2230%	11%
5013	1	45	44	4400%	14%
5014	25	404	379	1516%	10%
5015	306	1112	806	263%	4%
5016	33	637	604	1830%	10%
5017	292	1356	1064	364%	5%
5018	729	1541	812	111%	3%
5019	332	1075	743	224%	4%
5020	733	1189	456	62%	2%
5021	4	599	595	14875%	18%
5022	772	1524	752	97%	2%
5023	0	291	291	NA	NA
5024	1	76	75	7500%	16%
5025	9	174	165	1833%	10%
5026	587	1060	473	81%	2%
5027	175	551	376	215%	4%
5028	212	770	558	263%	4%
5029	672	1526	854	127%	3%
5030	175	627	452	258%	4%
5031	58	702	644	1110%	9%
5032	147	383	236	161%	3%
5033	95	552	457	481%	6%
5034	536	845	309	58%	2%
5035	183	928	745	407%	6%
5036	371	1032	661	178%	3%
5037	268	981	713	266%	4%
5038	175	493	318	182%	4%
5039	6	57	51	850%	8%
5040	51	457	406	796%	8%
5041	13	51	38	292%	5%
5042	1	116	115	11500%	17%
5043	3	301	298	9933%	17%
5044	267	525	258	97%	2%
5045	25	651	626	2504%	11%
5046	5	350	345	6900%	15%
5047	0	46	46	NA	NA
5048	0	43	43	NA	NA
5049	32	199	167	522%	6%
5050	56	792	736	1314%	9%
5051	49	1821	1772	3616%	13%
5052	335	1946	1611	481%	6%
5053	128	4999	4871	3805%	13%

5054	44	581	537	1220%	9%
5055	647	1427	780	121%	3%
5056	758	1182	424	56%	1%
5057	246	514	268	109%	2%
5058	231	547	316	137%	3%
5059	57	414	357	626%	7%
5060	0	121	121	NA	NA
5061	151	829	678	449%	6%
5062	153	821	668	437%	6%
5063	545	1435	890	163%	3%
5064	1548	2976	1428	92%	2%
5065	153	722	569	372%	5%
5066	833	1494	661	79%	2%
5067	51	337	286	561%	6%
5068	928	2717	1789	193%	4%
5069	434	1797	1363	314%	5%
5070	93	780	687	739%	7%
5071	385	1195	810	210%	4%
5072	55	194	139	253%	4%
5073	10	292	282	2820%	12%
5074	2	512	510	25500%	20%
5075	400	867	467	117%	3%
5076	794	1250	456	57%	2%
5077	93	3659	3566	3834%	13%
ALL Zones	**16593**	**61829**	**45236**	**273%**	**4%**

Adopted CTP Maps

Adopted by:

Town of Mooresville
Date: September 4, 2007

NCDOT
Date: June 5, 2008

Endorsed by:

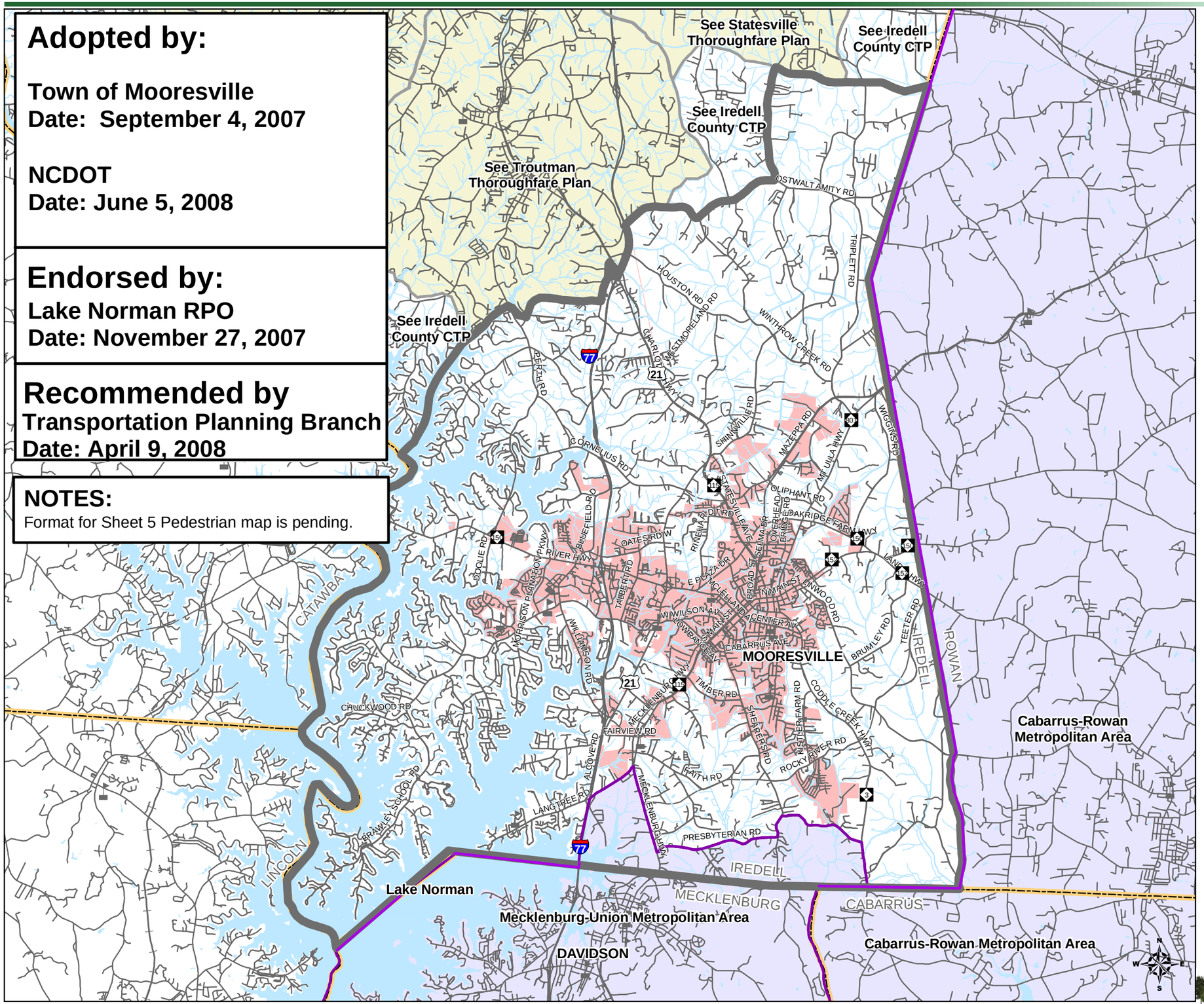
Lake Norman RPO
Date: November 27, 2007

Recommended by

Transportation Planning Branch
Date: April 9, 2008

NOTES:

Format for Sheet 5 Pedestrian map is pending.



Mooresville
Comprehensive Transportation Plan

Town of Mooresville

Iredell County
North Carolina

Comprehensive Transportation Plan

Plan date: September 4, 2007

Sheet 1 **Adoption Sheet**
Sheet 2 **Highway Map**
Sheet 3 **Public Transportation and Rail Map**
Sheet 4 **Bicycle Map**
Sheet 5 **Pedestrian Map**

Legend

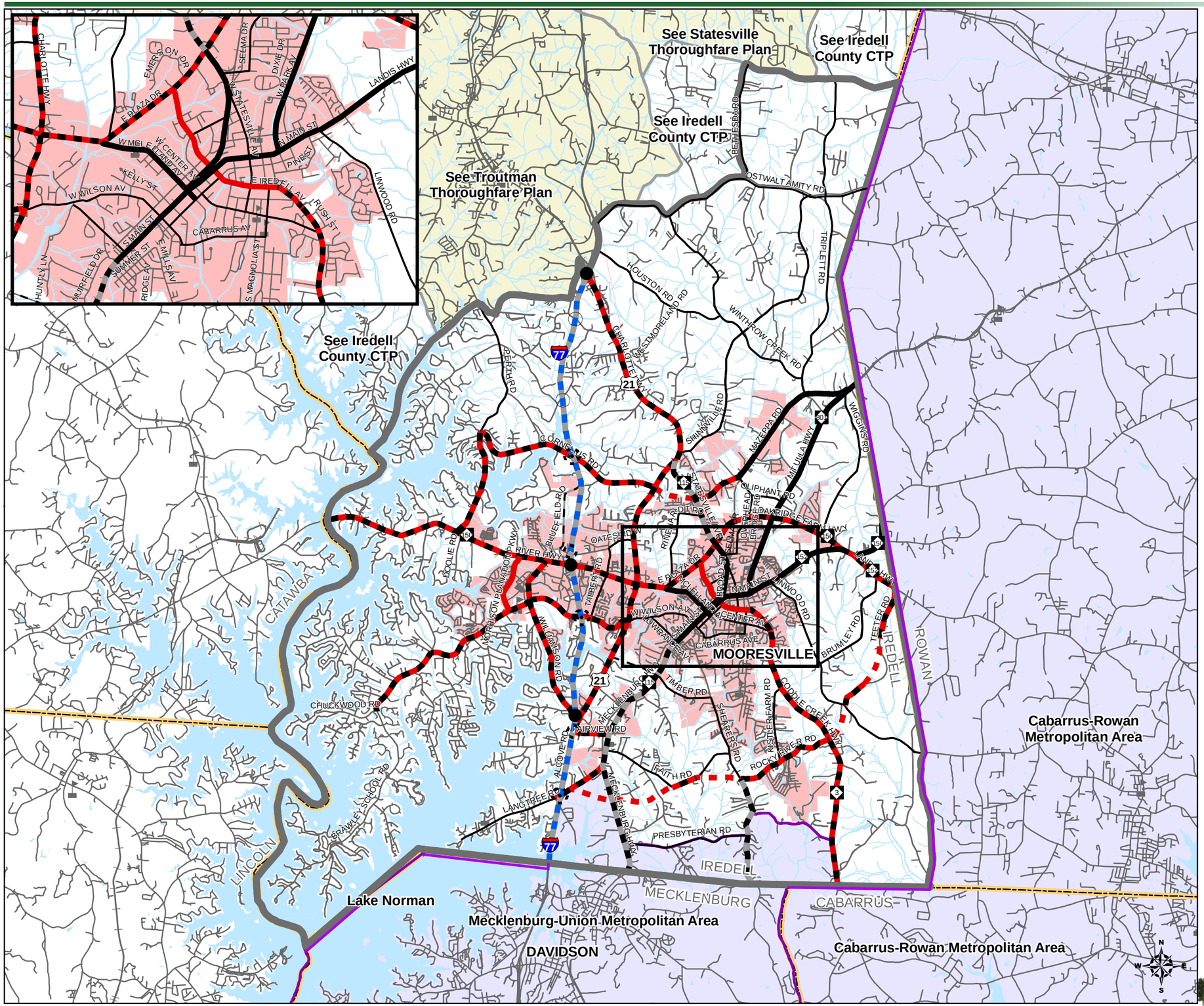
- Roads
- Bodies of Water
- County Boundary
- Municipal Boundary
- MPO Metropolitan Boundary
- Other Urban Planning Boundary
- Railroads
- Schools
- Mooresville Planning Boundary

Sheet 1 of 5

0 0.5 1 2 Miles

Base map date: 01/01/2006

Refer to CTP document for more details



Mooresville
Comprehensive Transportation Plan

Highway Map

Town of Mooresville
Comprehensive Transportation Plan

Plan date: September 4, 2007

Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

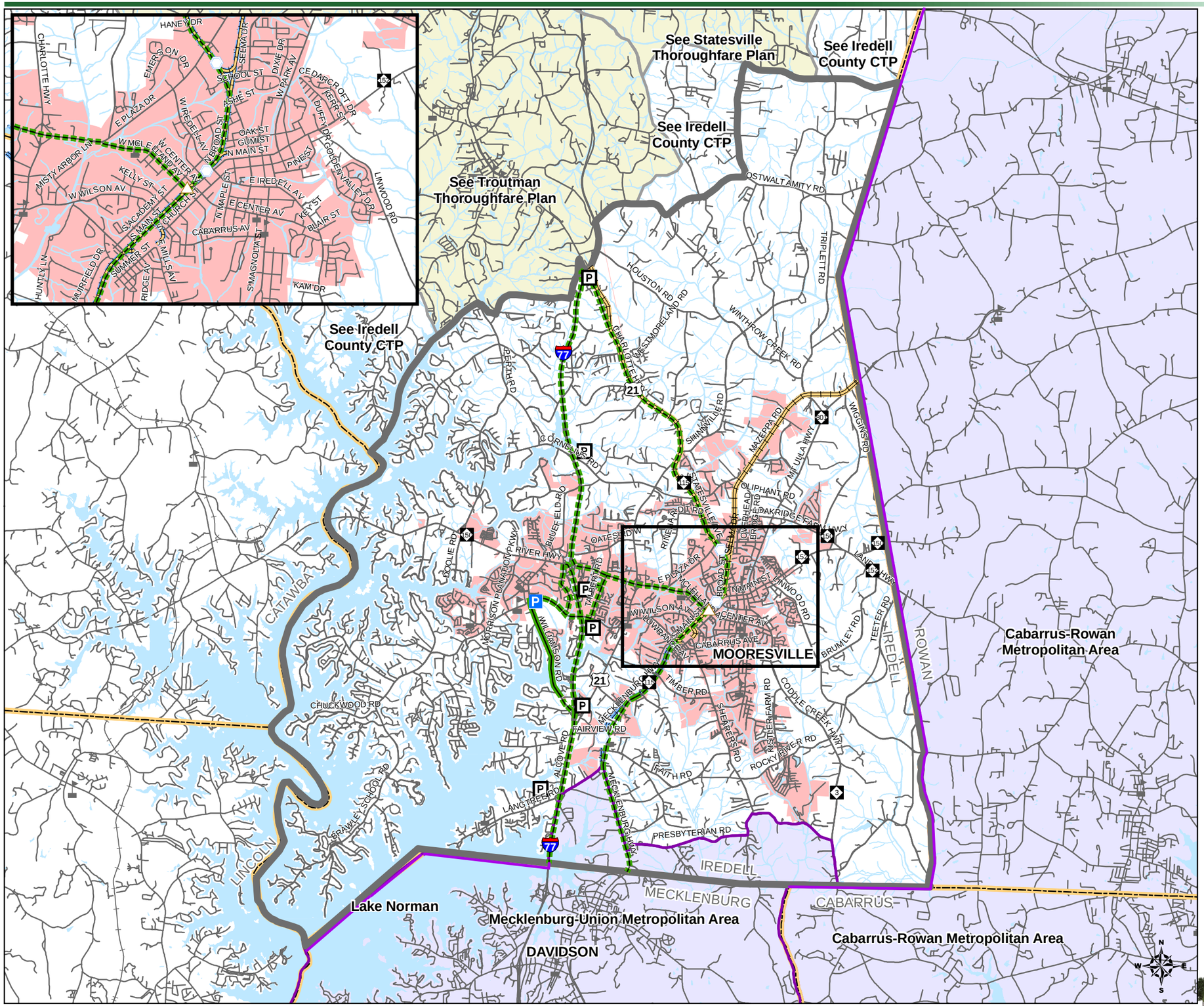
- Existing Interchange
- Proposed Interchange
- Existing Grade Separation
- Proposed Grade Separation

Sheet 2 of 5

0 0.5 1 2 Miles

Base map date: 01/01/2006

Refer to CTP document for more details



Mooresville

Comprehensive Transportation Plan

Public Transportation and Rail Map

Town of Mooresville

Comprehensive Transportation Plan

Plan date: September 4, 2007

Bus Routes
- Existing
- Needs Improvement
- Recommended

Fixed Guideway
- Existing
- Needs Improvement
- Recommended

Operational Strategies
- Existing
- Needs Improvement
- Recommended

Rail Corridor
- Active
- Inactive
- Recommended

High Speed Rail Corridor
- Existing
- Recommended

Rail Stops
- Existing
- Recommended

Intermodal Connector
- Existing
- Recommended

Park and Ride Lot
- Existing
- Recommended

Sheet 3 of 5

0 0.5 1 2 Miles

Base map date: 01/01/2006

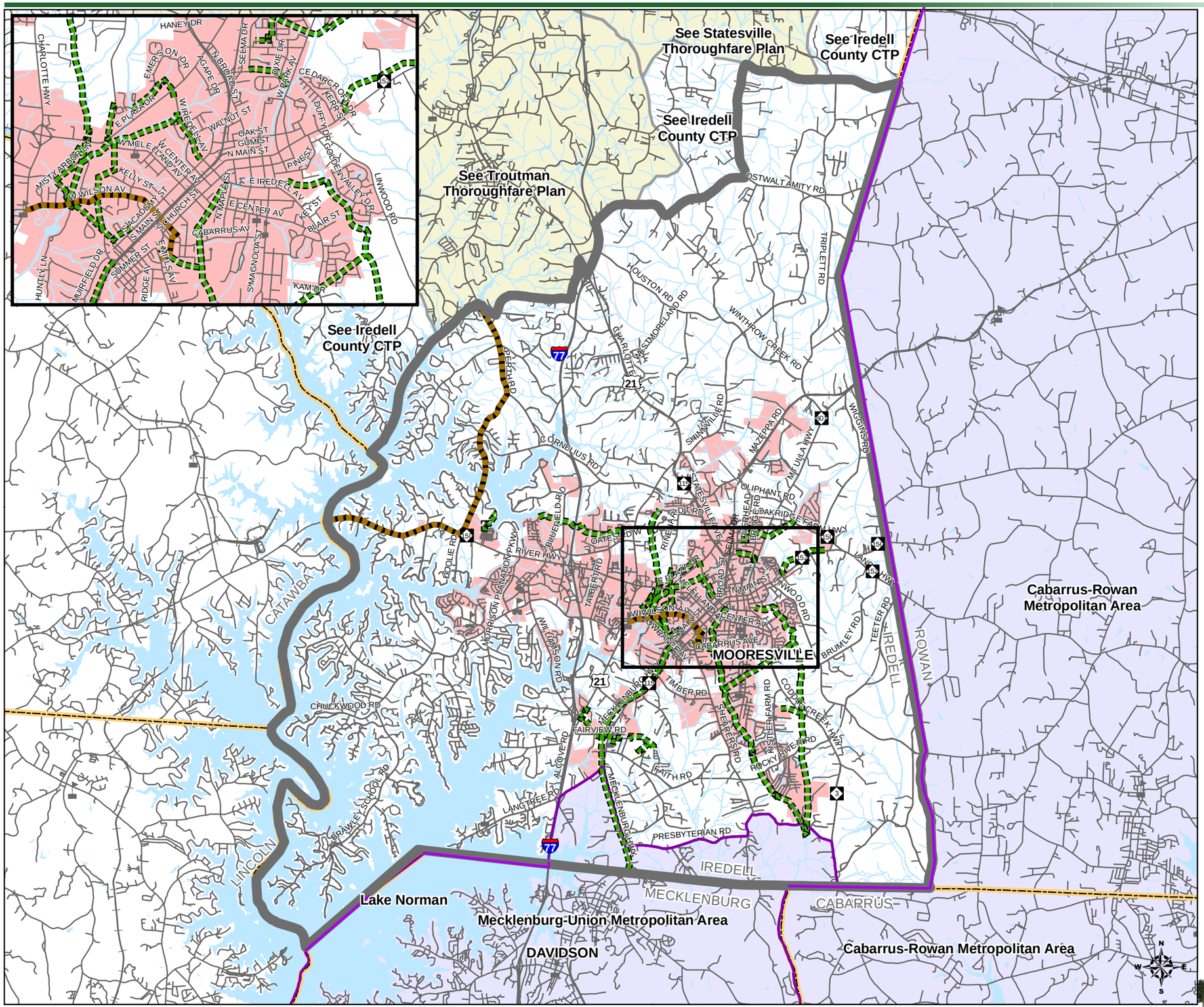
Refer to CTP document for more details

Mooresville
Comprehensive Transportation Plan

Bicycle Map

Town of Mooresville
Comprehensive Transportation Plan

Plan date: September 4, 2007



On-road
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

Sheet 4 of 5

0 0.45 0.9 1.8 Miles

Base map date: 01/01/2006
Refer to CTP document for more details

Mooresville Comprehensive Transportation Plan - NCDOT Recommendations Table

			Existing System							Proposed System						
		Distance	Lane Width	Cross-Section	Median	ROW	Speed Limit	Capacity	2005	Capacity	2030	Cross-Section	Median	ROW	Speed Limit	Other
From	To	(mi)	(ft)	lanes	(n=none)	(ft)	(mph)	(vpd)	ADT	(vpd)	ADT	lanes	(n=none)	(MIN ft)	(mph)	Maps
Bluefield Rd.																
River Hwy.	Cornelius Rd.	2.38	11	2	n	65	45	10000	9200	10000	13,200	2	n	65	45	
Brawley School Rd.																
US Highway 21	Interstate I-77	1.46	12	2	n	100	45	10000	25000	23000	37,000	4	divided	110	45	
Interstate I-77	Williamson Rd.	1.10	12	2	n	60	45	10000	11000	23000	37,000	4	divided	110	45	
Williamson Rd.	Oak Tree Rd.	1.03	12	2	TWLT	60	35	10000	24000	23000	37,000	4	divided	110	35	
Oak Tree Rd.	Blume Rd.	1.23	12	2	n	65	45	10000	12000	23000	37,000	4	divided	110	45	
Blume Rd.	Chuckwood Rd.	1.59	12	2	TWLT	60	35	10000	5800	23000	37,000	4	divided	110	35	
US Highway 21/Charlotte Hwy.																
Interstate I-77	Belk Rd.	3.53	12	2	n	60	45	10000	11000	50000	11,000	4	divided	110	45	
Belk Rd	NC Highway 115/Mecklenburg Hwy.	0.61	12	2	n	65	45	10000	12750	50000	18,000	4	divided	110	45	
NC Highway 115/Mecklenburg Hwy.	Oates Rd.	1.81	12	2	n	60	45	10000	14500	50000	28,000	4	divided	110	45	
Oates Rd.	Fairview Rd.	3.55	12	2	n	150	45	10000	34000	50000	27,500	4	divided	110	45	
Coddle Creek Hwy.																
Study Area Boundary	Rocky River Rd.	2.89	12	2	n	65	45	10000	8400	23000	30,000	4	divided	160	45	
Rocky River Rd.	Center Ave.	2.90	12	2	n	65	45	10000	8400	14500	30,000	2	divided	66	45	
Cornelius Rd.																
Perth Rd.	Interstate I-77	3.83	12	2	n	60	45	10000	4950	41000	29,500	4	divided	110	45	
Interstate I-77	US Highway 21/Charlotte Hwy.	3.83	12	2	n	60	45	10000	4950	41000	29,500	4	divided	110	45	
Fairview Rd.																
US Highway 21/Charlotte Hwy.	NC Highway 115/Mecklenburg Hwy.	1.02	12	2	n	60	35	10000	5800	10000	7,500	2	divided	66	35	
Faith Rd. (part on new location)																
Langtree Rd.	Shearers Rd.	2.79	12	2	n	60	45	10000	3550	50000	2,800	4	divided	110	45	
Interstate I-77																
Study Area Boundary	Study Area Boundary	10.64	12	4	divided	250	65	50000	53000	80000	70,600	8	divided	160	65	
Landis Hwy./NC 152																
Oakridge Dr.	County Line	0.97	12	2	n	100	55	10000	6600	50000	18,000	4	divided	110	55	
Langtree Rd.																
Interstate I-77	Lowe's Corp Campus	0.58	12	2	n	60	45	10000	6500	21000	8,000	6	divided	150	45	
Lowe's Corp Campus	NC Highway 115/Mecklenburg Hwy.	0.44	12	2	n	60	45	10000	6500	32000	13,000	4	divided	110	45	
Mazeppa Rd.																
US Highway 21/Charlotte Hwy.	NC Highway 115/Mecklenburg Hwy.	0.80	New Location							43700	14,800	4	divided	110	45	
NC Highway 115/Mecklenburg Hwy.	Overhead Bridge Rd.	0.97	12	2	n	60	45	10000	8200	43700	14,800	4	divided	110	45	
Overhead Bridge Rd.	Woodridge Ln.	0.92	12	2	n	60	45	10000	8200	43700	14,800	4	divided	110	45	
NC Highway 115/Mecklenburg Hwy.																
Lowrance Ave.	Doster Ave.	0.11	12	2	n	60	35	10000	31500	18000	26,000	2	n	85	35	
Doster Ave.	Timber Rd.	0.63	12	2	n	150	35	10000	31500	18000	26,000	2	n	150	35	
Timber Rd.	Fairview Rd.	4.19	12	2	n	60	45	10000	31500	18000	26,000	2	n	85	45	
Fairview Rd.	Study Area Boundary	1.33	12	2	n	60	45	10000	31500	18000	26,000	2	n	85	45	
NC 150/River Hwy./Plaza Dr.																
Landis Hwy.	N. Broad St.	2.88	12	2	n	105	45	10000	22000	31000	24,000	4	divided	110	45	
N. Broad St.	W. McClelland Ave.	1.28	12	4	TWLT	100	35	20000	22000	31000	24,000	4	divided	110	35	
W. McClelland Ave.	Talbert Rd.	1.18	12	4	TWLT	100	45	20000	36700	31000	24,000	4	divided	110	45	
Talbert Rd.	Ervin Rd.	1.71	12	4	TWLT	100	45	20000	36700	31000	24,000	4	divided	110	45	
Rinehardt Rd.	Morrison Plantation Pkwy.	2.84	12	4	TWLT	100	45	20000	37000	31000	24,000	4	divided	110	45	
Ervin Rd.	Water Oak Rd.	0.75	12	2	n	60	45	10000	37000	50000	61,700	4	divided	110	45	
Water Oak Rd.	Perth Rd.	0.43	12	2	TWLT	60	45	10000	37000	50000	61,700	4	divided	110	45	
Perth Rd.	Waddell Rd.	1.42	12	2	TWLT	60	45	10000	37000	34000	52,000	4	divided	110	45	
Waddell Rd.	Catawba County Line	1.40	11	2	n	100	45	10000	37000	34000	52,000	4	divided	110	45	
Perth Rd.																
River Hwy.	Cornelius Rd.	2.63	12	2	n	60	45	10000	6200	31000	17,500	4	divided	110	45	
Cornelius Rd.	Study Area Boundary	2.06	12	2	n	100	45	10000	6850	10000	17,500	2	n	100	45	
Rocky River Rd.																
Coddle Creek Hwy.	Shearers Rd.	1.93	12	2	n	60	45	10000	1950	50000	9,300	4	divided	110	45	
Shearers Rd.																
Rocky River Rd.	Blackwelder Farm	1.28	12	2	n	60	35	10000	3200	20000	16,600	4	n	90	35	
Blackwelder Farm Dr.	Presbyterian Rd.	2.36	12	2	n	60	45	10000	4900	20000	16,600	4	n	90	45	
Rocky River Rd.	Mecklenburg County Line	2.16	12	2	n	60	45	10000	4900	20000	16,450	4	n	90	45	
NC Highway 115/Statesville Hwy.																
Iredell Ave	Walnut St.	0.40	12	2	n	50	35	10000	11000	38000	19,500	4	n	90	35	
Walnut St.	Williams Ave.	0.51	12	2	n	45	35	10000	11000	38000	19,500	4	n	90	35	
Williams Ave.	River Rd.	0.26	10	2	n	45	35	10000	11000	38000	19,500	4	n	90	35	
River Rd.	Haney	0.74	12	2	n	150	35	10000	12500	38000	19,500	4	n	90	35	
Haney Dr.	US Highway 21	1.58	12	2	n	60	45	10000	14000	38000	19,500	4	n	90	45	
Teeter Rd. (part on new location)																
Coddle Creek Hwy.	Landis Hwy.	2.76	12	2	n	60	45	10000	285	50000	2,600	4	divided	110	45	
Williamson Rd.																
NC 150/River Hwy.	Brawley School Rd.	0.87	12	2	TWLT	80	45	10000	13000	34000	15,000	4	divided	110	45	
Brawley School Rd.	Interstate I-77	2.36	12	2	n	100	45	10000	37000	34000	15,000	4	divided	110	45	
Wilson Ave.																
US Highway 21	S. Main St.	1.01	11	2	n	60	35	10000	7000	10000	10,400	2	n	60	35	
Timber Rd. Extension																
Timber Rd.	US Highway 21	0.93	New Location							10000	10,400	2	n	60	35	