Chapter V

TRANSPORTATION
CONSULTANTS, INC.

CHAPTER V

Demand Estimation

This chapter examines the demand for transit that exists within the study area. This chapter uses numerous models and formulas to help quantify different segments of transit demand. The first methodology examines the prevalence of transit-dependent population concentrations within the study area. The second examines program trips, while the last looks at potential commute trips.

GREATEST TRANSIT NEEDS INDEX

The "greatest transit need" is defined as those portions of the study area with the highest percentage of zero-vehicle households and elderly, disabled, and below-poverty populations. This information was used to develop the transit service plan and identify the appropriate service district boundaries.

Methodology

The categories used for the greatest transit needs calculation were zero-vehicle households, elderly population, disabled population, and below-poverty population. Using these categories, LSC developed a "transit need index" to determine the greatest transit need. The percentage of the population for each US Census block group within each category was calculated, placed in numerical order, and divided into five segments. Five segments were chosen to reflect a reasonable range. Each segment contained an approximately equal number of US Census block groups to provide equal representation.

The US Census block groups in the segment with the lowest percentages were given a score of one. The block groups in the segment with the next lowest percentages were given a score of two, and so on. The blocks groups in the segment with the highest percentages were given a score of five. This scoring was completed for each of the categories (zero-vehicle households, elderly population, disabled population, and below-poverty population). After each of the block groups was scored for the four categories, the four scores were added up to achieve an overall score. Tables V-1 through V-3 present the ranked scores for

each US Census block group in the study area for the years 2010, 2020, and 2035. Estimates were made using population growth data obtained from the MPO relating to the study area. The scores range from four (lowest need) to 20 (highest need). These tabular data are interpreted graphically with figures and additional text that follow.

Table V-1

2010 Greatest Transit Need

Census Tract	Census Block Group	Land Area (sq.ml.)	Zero-Vehicle Hhlds #	Zero-Vehicle Hhlds Density	Zero-Vehicle Hhlds rank	Total # of Hhlds #	Total Number of Elderly 60 & over #	Total Number of Elderly 60 & over Density	Total Number of Elderly 60 & over rank	Mobility-Limited Population #	Mobility-Limited Population Density	Mobility-Limited Population rank	Below-Poverty Population #	Below-Poverty Population Density	Below-Poverty Population rank	Overall Score (4-20)	Final (1-5)	Total Population (Persons) #
1	1	0.73	0	0	1	89	35	49	2	28	38	2	34	47	2	7	2	248
1	2	0.94	71	75	5	621	220	234	4	143	152	4	546	581	5	18	5	1,823
1	3	1.65	32	19	3	455	243	147	3	88	53	3	239	145	3	12	3	1,332
1	4	2.36	9	4	1	650	140	59	3	171	72	3	631	267	3	10	3	1,833
1	5	0.36	56	156	5	278	138	383	5	66	183	4	189	526	5	19	5	735
2.01	1	2.42	17	7	2	454	188	78	3	34	14	2	0	0	1	8	2	1,237
2.01	2	2.59	6	2	1	869	297	115	3	127	49	3	118	46	2	9	3	2,415
2.02	1	5.48	0	0	1	800	414	76	3	23	4	1	28	5	1	6	2	2,488
2.02	2	3.05	9	3	1	495	178	58	3	16	5	1	39	13	1	6	2	1,389
2.02	3	0.40	0	0	1	272	127	317	5	73	183	4	21	52	2	12	3	705
2.04	1	0.88	0	0	1	215	139	158	3	0.00	0.00	1	0.00	0.00	1	6	2	653
2.04	2	1.03	38	37	4	676	239	232	4	123	120	4	397	385	4	16	4	2,000
2.05	1	0.44	18	42	5	635	220	500	5	89	203	5	278	633	5	20	5	1,585
2.05	2	0.22	22	100	5	400	53	239	4	109	494	5	74	339	4	18	5	1,158
2.05	3	0.57	137	240	5	728	155	272	4	38	66	3	643	1,129	5	17	4	1,879
2.05	4	1.32	83	63	5	1,109	386	292	4	112	85	3	508	385	4	16	4	3,057
3.01	1	0.31	12	39	4	780	238	768	5	87	280	5	359	1,158	5	19	5	1,767
3.01	2	0.22	9	39	4	424	259	1,177	5	20	89	3	55	250	3	15	4	1,067
3.01	3	0.26	7	28	4	347	112	432	5	9	33	2	98	376	4	15	4	1,035
3.01	4	0.37	137	370	5	867	435	1,175	5	117	317	5	156	422	4	19	5	1,897
3.02	1	0.23	15	64	5	497	270	1,173	5	60	260	5	160	695	5	20	5	1,291
3.02	2	0.12	0	0	1	303	187	1,557	5	29	244	5	56	468	4	15	4	737
3.02	3	0.15	35	236	5	359	99	659	5	6	41	3	154	1,026	5	18	5	780
3.02	4	0.27	17	63	5	458	179	665	5	87	321	5	271	1,004	5	20	5	1,159
4.01	1	0.45	0	0	1	508	260	578	5	37	81	3	20	43	2	11	3	1,375
4.01	2	0.58	15	25	4	614	398	686	5	83	143	4	62	107	3	16	4	1,630
4.01	3	2.64	103	39	4	811	192	73	3	128	49	3	585	222	3	13	3	2,134
4.01	4	0.12	13	112	5	324	212	1,770	5	73	611	5	96	804	5	20	5	807
4.02	4	0.89	79	89	5	725	128	144	3	100	112	4	519	583	5	17	4	1,868
4.02	5	0.85	74	88	5	703	465	547	5	145	171	4	404	475	4	18	5	1,775
5.01	1	5.74	40	7	2	839	214	37	2	126	22	2	580	101	3	9	3	2,800
5.01	2	145.62	28	0	1	814	176	1	1	61	0	1	253	2	1	4	1	2,459
5.02	1	3.44	10	3	1	633	242	70	3	109	32	2	174	51	2	8	2	1,966
5.02	2	8.66	13	2	1	1,167	279	32	2	178	21	2	672	78	2	7	2	4,168
5.02	3	56.49	15	0	1	181	36	1	1	26	0	1	95	2	1	4	1	542
5.02	4	6.79	31	5	1	584	187	27	2	113	17	2	391	58	2	7	2	1,939
6.01	1	0.59	44	75	5	614	191	324	5	59	99	3	280	474	4	17	4	1,576
6.01	2	15.98	15	1	1	589	275	17	2	104	7	1	94	6	1	5	1	1,717
6.01	3	8.86	67	8	2	896	310	35	2	71	8	1	396	45	2	7	2	2,201
6.01	5	94.60	8	0	1	494	213	2	1	39	0	1	128	1	1	4	1	1,439
6.05	1	25.36	7	0	1	1,032	499	20	2	240	9	1	345	14	1	5	1	2,876
6.05	2	13.86	17	1	1	451	230	17	2	74	5	1	62	4	1	5	1	1,149
6.05	3	2.00	8	4	1	454	194	97	3	37	19	2	280	140	3	9	3	1,895
6.05	4	1.91	11	6	1	408	203	106	3	74	39	2	162	85	2	8	2	1,172
6.06	1	18.27	97	5	1	1,612	477	26	2	285	16	2	532	29	2	7	2	4,634
6.06	2	17.83	12	1	1	965	267	15	2	98	5	1	388	22	2	6	2	3,332
6.06	3	1.82	0	0	1	471	236	129	3	70	38	2	495	272	3	9	3	1,274
7.02	2	107.75	0	0	1	284	124	1	1	64	1	1	14	0	1	4	1	856
7.03	1	320.63	39	0	1	835	345	1	1	228	1	1	303	1	1	4	1	2,575
7.03	2	1.99	35	18	3	603	210	106	3	154	77	3	128	64	2	11	3	1,521
7.03	3	6.15	28	4	1	1,048	371	60	3	105	17	2	479	78	2	8	2	2,873
7.04	1	20.36	24	1	1	1,213	490	24	2	216	11	2	649	32	2	7	2	3,800
7.04	2	5.30	31	6	1	1,120	390	74	3	199	38	2	630	119	3	9	3	3,385
7.04	3	0.84	31	37	4	735	319	379	5	164	195	4	260	310	4	17	4	2,141
9430	1	186.10	76	0	1	767	200	1	1	257	1	1	1,084	6	1	4	1	3,221
9432	1	46.90	45	1	1	1,243	313	7	1	185	4	1	460	10	1	4	1	3,749
		1,156	1,747	2,124		36,515	13,596			5,555			16,073					105,120

Table V-2
2020 Greatest Transit Need

Census Tract	Census Block Group	Land Area (sq.mi.)	Zero-Vehicle Hhlds #	Zero-Vehicle Hhlds Density	Zero-Vehicle Hhlds rank	Total # of Hhlds #	Total Number of Elderly 60 & over #	Total Number of Elderly 60 & over Density	Total Number of Elderly 60 & over rank	Mobility-Limited Population #	Mobility-Limited Population Density	Mobility-Limited Population rank	Below-Poverty Population #	Below-Poverty Population Density	Below-Poverty Population rank	Overall Score (4-20)	Final (1-5)	Total Population (Persons) #
1	1	0.73	0	0	1	105	42	57	2	33	45	3	40	55	3	9	2	292
1	2	0.94	83	89	5	733	259	276	4	168	179	4	643	684	5	18	4	2,149
1	3	1.65	37	23	4	537	286	174	3	104	63	3	282	171	3	13	3	1,570
1	4	2.36	10	4	2	766	166	70	2	201	85	3	744	315	4	11	3	2,160
1	5	0.36	66	184	5	328	163	452	4	78	216	5	223	620	5	19	5	866
2.01	1	2.42	20	8	3	535	222	92	2	40	17	2	0	0	1	8	2	1,458
2.01	2	2.59	7	3	2	1,025	350	135	3	150	58	3	140	54	3	11	3	2,847
2.02	1	5.48	0	0	1	943	488	89	2	27	5	1	33	6	1	5	1	2,933
2.02	2	3.05	10	3	2	583	210	69	2	19	6	1	46	15	2	7	2	1,638
2.02	3	0.40	0	0	1	321	150	374	4	86	216	5	24	61	3	13	3	830
2.04	1	0.88	0	0	1	253	164	186	3	0	0	1	0	0	1	6	1	770
2.04	2	1.03	45	43	4	797	282	274	3	145	141	4	468	454	4	15	4	2,357
2.05	1	0.44	22	49	4	748	259	589	5	105	239	5	328	746	5	19	5	1,868
2.05	2	0.22	26	118	5	472	62	281	4	128	582	5	88	399	4	18	4	1,364
2.05	3	0.57	161	283	5	858	183	321	4	45	78	3	758	1,331	5	17	4	2,215
2.05	4	1.32	98	74	5	1,307	455	345	4	132	100	4	599	454	4	17	4	3,604
3.01	1	0.31	14	46	4	920	281	905	5	102	330	5	423	1,365	5	19	5	2,083
3.01	2	0.22	10	46	4	499	305	1,387	5	23	105	4	65	294	3	16	4	1,258
3.01	3	0.26	9	33	4	409	132	509	5	10	39	2	115	443	4	15	4	1,220
3.01	4	0.37	161	436	5	1,022	512	1,385	5	138	373	5	184	498	5	20	5	2,237
3.02	1	0.23	17	75	5	586	318	1,383	5	71	307	5	189	820	5	20	5	1,521
3.02	2	0.12	0	0	1	357	220	1,835	5	35	288	5	66	552	5	16	4	869
3.02	3	0.15	42	278	5	423	117	777	5	7	48	3	181	1,209	5	18	4	920
3.02	4	0.27	20	75	5	540	212	784	5	102	378	5	320	1,183	5	20	5	1,366
4.01	1	0.45	0	0	1	599	307	681	5	43	96	3	23	51	3	12	3	1,621
4.01	2	0.58	17	30	4	724	469	809	5	98	169	4	73	127	3	16	4	1,921
4.01	3	2.64	121	46	4	956	226	86	2	151	57	3	689	261	3	12	3	2,516
4.01	4	0.12	16	132	5	381	250	2,087	5	86	720	5	114	947	5	20	5	951
4.02	4	0.89	94	105	5	855	151	170	3	118	133	4	612	687	5	17	4	2,202
4.02	5	0.85	88	103	5	829	548	645	5	171	201	5	476	560	5	20	5	2,093
5.01	1	5.74	47	8	3	989	252	44	2	148	26	2	684	119	3	10	3	3,300
5.01	2	145.62	33	0	1	960	207	1	1	72	0	1	298	2	1	4	1	2,899
5.02	1	3.44	12	3	2	746	285	83	2	129	37	2	206	60	3	9	2	2,546
5.02	2	8.66	16	2	2	1,375	329	38	2	210	24	2	792	92	3	9	2	5,397
5.02	3	56.49	18	0	1	213	43	1	0	31	1	1	112	2	1	3	1	702
5.02	4	6.79	36	5	2	688	220	32	2	133	20	2	461	68	3	9	2	2,511
6.01	1	0.59	49	82	5	671	209	354	4	64	108	4	306	518	5	18	4	1,723
6.01	2	15.98	17	1	2	644	301	19	1	114	7	1	102	6	1	5	1	1,876
6.01	3	8.86	73	8	3	979	339	38	2	78	9	1	433	49	2	8	2	2,406
6.01	5	94.60	9	0	1	540	233	2	1	42	0	1	140	1	1	4	1	1,573
6.05	1	25.36	8	0	1	1,128	545	21	1	262	10	2	378	15	2	6	1	3,143
6.05	2	13.86	20	1	2	531	271	20	1	88	6	1	73	5	1	5	1	1,354
6.05	3	2.00	9	4	2	497	212	106	3	41	20	2	306	153	3	10	3	2,071
6.05	4	1.91	12	6	3	445	221	116	3	81	42	3	177	92	3	12	3	1,281
6.06	1	18.27	106	6	3	1,762	521	29	1	311	17	2	581	32	2	8	2	5,065
6.06	2	17.83	13	1	2	1,054	315	18	1	115	6	1	458	26	2	6	1	3,928
6.06	3	1.82	0	0	1	515	278	153	3	82	45	3	583	320	4	11	3	1,501
7.02	2	107.75	0	0	1	310	166	2	1	85	1	1	18	0	1	4	1	1,146
7.03	1	320.63	42	0	1	913	462	1	1	304	1	1	405	1	1	4	1	3,445
7.03	2	1.99	47	24	4	659	281	141	3	206	103	4	171	86	3	14	3	2,035
7.03	3	6.15	37	6	3	1,402	497	81	2	140	23	2	641	104	3	10	3	3,843
7.04	1	20.36	32	2	2	1,622	656	32	2	289	14	2	868	43	2	8	2	5,084
7.04	2	5.30	42	8	3	1,499	522	98	3	266	50	3	843	159	3	12	3	4,529
7.04	3	0.84	42	50	4	983	426	508	4	219	261	5	348	414	4	17	4	2,865
9430	1	186.10	102	1	1	1,026	268	1	1	344	2	1	1,450	8	1	4	1	4,171
9432	1	46.90	60	1	2	1,662	418	9	1	248	5	1	615	13	2	6	1	5,016
		1,156	2,075	2,507		43,223	16,263			6,720			19,394					127,110

Table V-3
2035 Greatest Transit Need

Census Tract	Census Block Group	Land Area (sq.ml.)	Zero-Vehicle Hhlds #	Zero-Vehicle Hhlds Density	Zero-Vehicle Hhlds rank	Total # of Hhlds #	Total Number of Elderly 60 & over #	Total Number of Elderly 60 & over Density	Total Number of Elderly 60 & over rank	Mobility-Limited Population #	Mobility-Limited Population Density	Mobility-Limited Population rank	Below-Poverty Population #	Below-Poverty Population Density	Below-Poverty Population rank	Overall Score (4-20)	Final (1-5)	Total Population (Persons) #
1	1	0.73	0	0	1	116	46	63	2	37	50	3	45	61	2	8	2	323
1	2	0.94	92	98	5	810	287	305	3	186	198	4	712	757	5	17	4	2,377
1	3	1.65	41	25	3	594	317	192	3	115	69	3	312	189	3	12	3	1,737
1	4	2.36	11	5	2	847	183	78	2	223	94	4	823	349	4	12	3	2,390
1	5	0.36	73	203	5	363	180	500	4	86	239	5	247	686	5	19	5	958
2.01	1	2.42	22	9	3	592	245	101	3	45	18	2	0	0	1	9	2	1,613
2.01	2	2.59	8	3	2	1,134	387	149	3	166	64	3	154	60	2	10	3	3,149
2.02	1	5.48	0	0	1	1,043	540	98	3	30	6	1	37	7	1	6	1	3,245
2.02	2	3.05	11	4	2	645	232	76	2	21	7	1	51	17	2	7	2	1,812
2.02	3	0.40	0	0	1	355	166	414	4	96	239	5	27	68	2	12	3	919
2.04	1	0.88	0	0	1	280	182	206	3	0	0	1	0	0	1	6	1	852
2.04	2	1.03	49	48	4	882	312	303	3	161	156	4	517	502	4	15	4	2,608
2.05	1	0.44	24	54	4	828	287	651	4	116	264	5	363	825	5	18	5	2,067
2.05	2	0.22	29	130	5	522	68	311	3	142	644	5	97	441	4	17	4	1,509
2.05	3	0.57	178	313	5	949	202	355	3	49	87	4	839	1,472	5	17	4	2,450
2.05	4	1.32	108	82	4	1,446	503	381	3	146	111	4	662	502	4	15	4	3,987
3.01	1	0.31	16	51	4	1,017	310	1,002	5	113	365	5	468	1,510	5	19	5	2,304
3.01	2	0.22	11	51	4	552	338	1,534	5	25	116	4	72	326	4	17	4	1,392
3.01	3	0.26	10	37	4	452	146	563	4	11	43	2	127	490	4	14	4	1,350
3.01	4	0.37	178	482	5	1,130	567	1,532	5	153	413	5	204	551	5	20	5	2,474
3.02	1	0.23	19	83	4	648	352	1,530	5	78	339	5	209	907	5	19	5	1,683
3.02	2	0.12	0	0	1	395	244	2,030	5	38	318	5	73	610	5	16	4	962
3.02	3	0.15	46	308	5	468	129	860	5	8	53	3	201	1,337	5	18	5	1,017
3.02	4	0.27	22	83	4	597	234	867	5	113	419	5	353	1,309	5	19	5	1,511
4.01	1	0.45	0	0	1	662	339	754	4	48	106	4	25	57	2	11	3	1,793
4.01	2	0.58	19	33	4	801	519	895	5	108	187	4	81	140	3	16	4	2,126
4.01	3	2.64	134	51	4	1,057	250	95	2	167	63	3	763	289	3	12	3	2,783
4.01	4	0.12	18	146	5	422	277	2,309	5	96	796	5	126	1,048	5	20	5	1,052
4.02	4	0.89	103	116	5	946	167	188	3	131	147	4	677	760	5	17	4	2,436
4.02	5	0.85	97	114	5	917	607	714	4	189	223	5	527	620	5	19	5	2,315
5.01	1	5.74	53	9	3	1,094	279	49	2	164	29	2	756	132	3	10	3	3,651
5.01	2	145.62	37	0	1	1,062	229	2	1	80	1	1	330	2	1	4	1	3,207
5.02	1	3.44	13	4	2	825	315	92	2	143	41	2	227	66	2	8	2	2,810
5.02	2	8.66	17	2	2	1,522	364	42	2	232	27	2	877	101	3	9	2	5,956
5.02	3	56.49	20	0	1	236	48	1	1	35	1	1	124	2	1	4	1	775
5.02	4	6.79	40	6	2	762	243	36	2	147	22	2	510	75	2	8	2	2,770
6.01	1	0.59	54	91	5	741	231	391	3	71	120	4	338	573	5	17	4	1,904
6.01	2	15.98	18	1	2	712	332	21	1	126	8	1	113	7	2	6	1	2,074
6.01	3	8.86	81	9	3	1,082	375	42	2	86	10	1	478	54	2	8	2	2,659
6.01	5	94.60	10	0	1	597	257	3	1	47	0	1	154	2	1	4	1	1,739
6.05	1	25.36	8	0	1	1,246	603	24	2	290	11	2	417	16	2	7	2	3,474
6.05	2	13.86	22	2	2	588	299	22	1	97	7	1	81	6	1	5	1	1,498
6.05	3	2.00	10	5	2	549	235	117	3	45	23	2	338	169	3	10	3	2,289
6.05	4	1.91	13	7	3	492	245	128	3	89	47	2	195	102	3	11	3	1,416
6.06	1	18.27	117	6	2	1,948	576	32	2	344	19	2	642	35	2	8	2	5,597
6.06	2	17.83	16	1	2	1,258	349	20	1	127	7	1	506	28	2	6	1	4,345
6.06	3	1.82	0	0	1	615	307	169	3	91	50	3	645	354	4	11	3	1,661
7.02	2	107.75	0	0	1	421	184	2	1	95	1	1	20	0	1	4	1	1,271
7.03	1	320.63	58	0	1	1,239	512	2	1	338	1	1	449	1	1	4	1	3,821
7.03	2	1.99	52	26	3	894	312	157	3	228	115	4	189	95	3	13	3	2,258
7.03	3	6.15	41	7	3	1,554	551	90	2	156	25	2	710	116	3	10	3	4,263
7.04	1	20.36	35	2	2	1,799	727	36	2	321	16	2	963	47	2	8	2	5,639
7.04	2	5.30	46	9	3	1,662	579	109	3	295	56	3	935	176	3	12	3	5,023
7.04	3	0.84	46	55	4	1,091	473	563	4	243	289	5	386	459	4	17	4	3,178
9430	1	186.10	108	1	1	1,089	284	2	1	365	2	1	1,539	8	2	5	1	4,603
9432	1	46.90	67	1	2	1,844	464	10	1	275	6	1	683	15	2	6	1	5,563
		1,156	2,303	2,773		48,393	17,987			7,423			21,399					140,637

Results

Figures V-1 through V-3 show the results of the analysis in graphic form. For 2010, the areas of highest transit needs are primarily within the urban core of Farmington. There is one census block group each in Aztec and Bloomfield that ranked a four. In general, the areas on the edge of the study area have lower scores.

Figure V-2, which represents the 2020 data, shows a similar pattern, but with some of the block groups in Aztec and Bloomfield recording slightly higher scores. This shows that there may be a small shift in the need for transit in the future being within these areas, especially with the high growth projections in Bloomfield. It should be noted that an increase in transit need in one area does not mean that transit service would be lessened or stopped in another. With this shift in population, the regional routes could see a positive boost in ridership. It is also possible that local routes could be established in Aztec and Bloomfield, as a regional route alone may not be enough to serve a growing population.

Lastly, 2035 data show less of a shift than the previous pairing. This is most likely due to the faster pace of growth predicted over the next 10 years, as opposed to the next 25 years. There might be a more rapid need for transit over the next 10 years, while the following 15 see a more manageable growth rate. The growth within San Juan County is expected to slow down during this time period for a variety of reasons. As the county is expected to experience a significant amount of growth over the next ten years, the most desirable land will be developed. In the years that follow, less desirable land, and less land in general will be available. In addition, there is also the factor of land use regulation constraints, which would influence the rate of growth during this time period. Other factors that could limit the growth within the region are the topography of the land and the presence of culturally significant archeological sites. While there is a small shift toward higher need in Aztec and Bloomfield in the future, the areas that show the most need for transit still remain in the urban core of Farmington.

Figure V-1
2010 Greatest Transit Needs Index

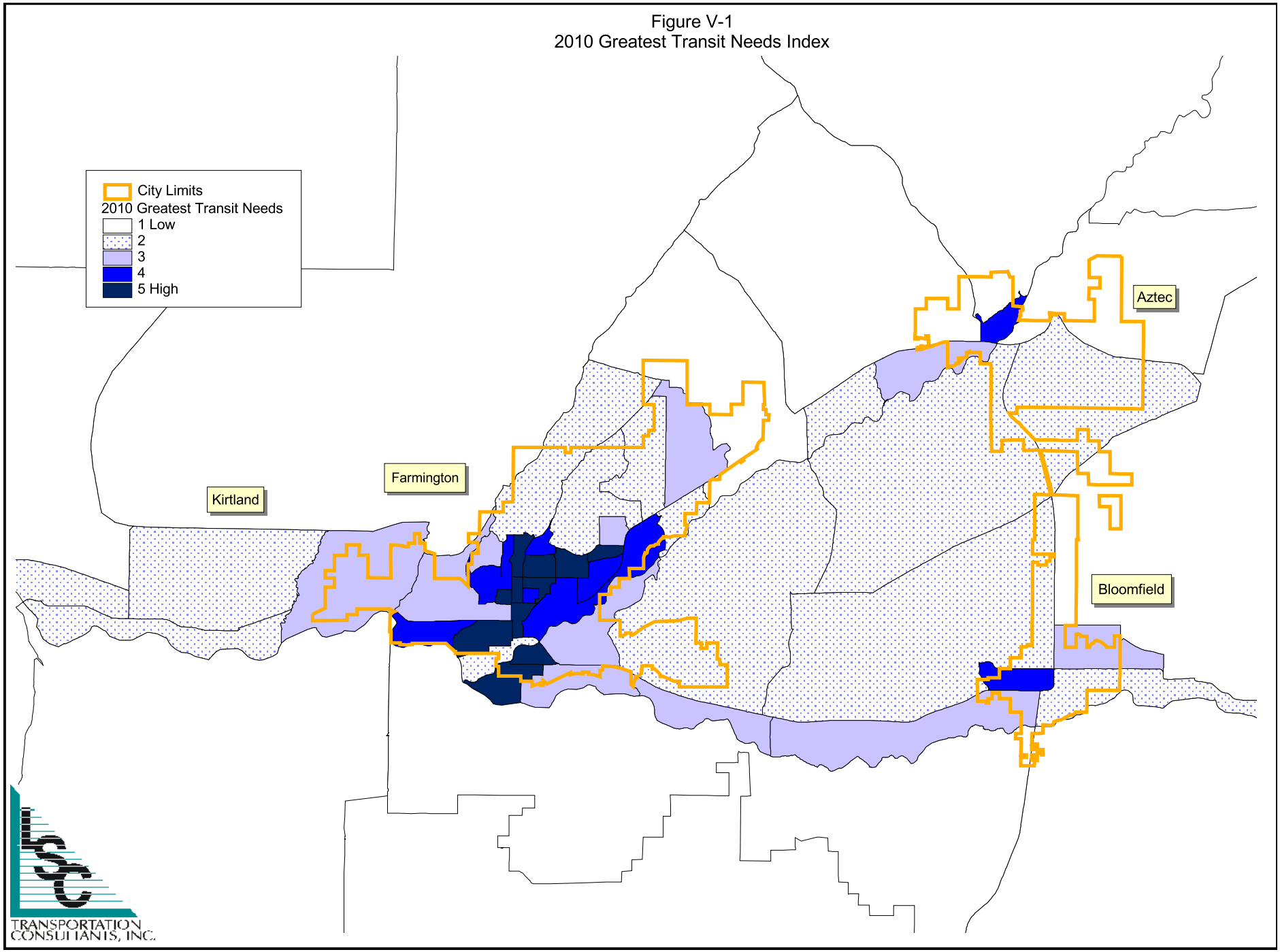


Figure V-2
2020 Greatest Transit Needs Index

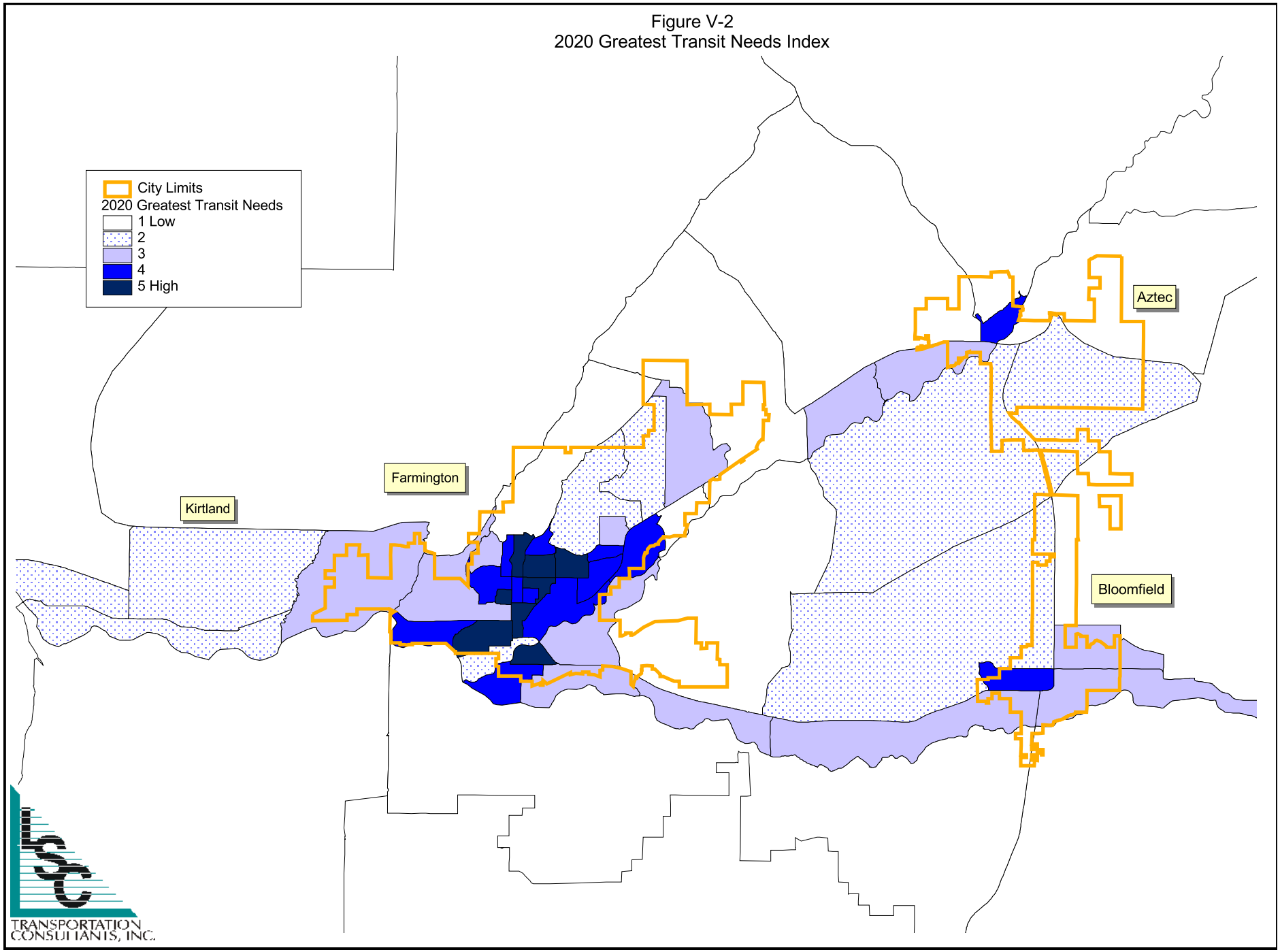
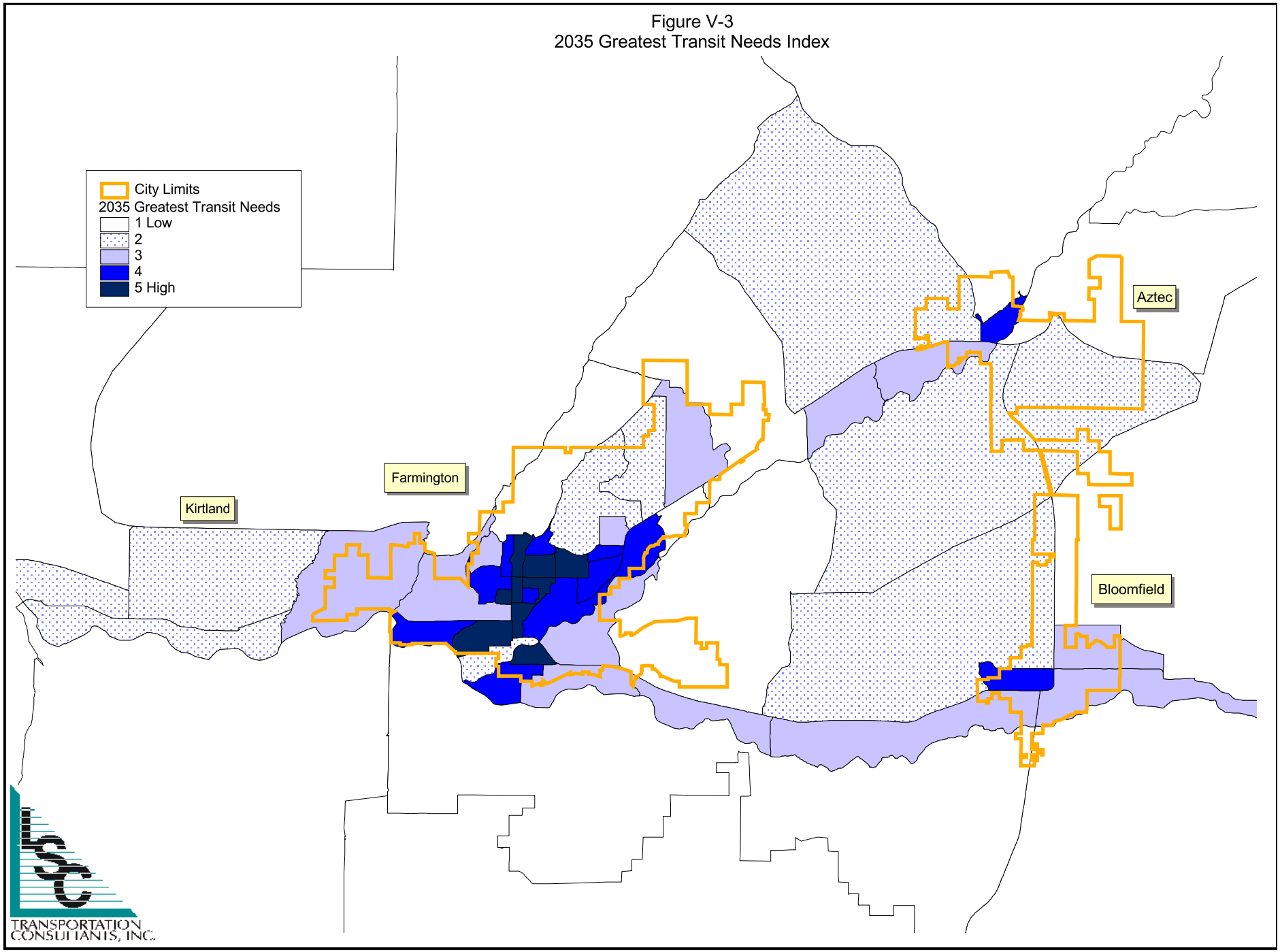


Figure V-3
2035 Greatest Transit Needs Index



Ranges

Table V-4 provides information related to the number of block groups for each ranking, and what the range for each ranking is related to zero-vehicle households. Ranking one—denoting the lowest density of households without access to a vehicle—contains 14 block groups, all with fewer than one household per square mile. Block groups ranked "2" ranged from one to five and contained 14 block groups. Block groups in the ranking category of "3" ranged between six and 28 zero-vehicle households per square mile, and included nine total block groups. There were a total of nine block groups ranked "4" and were in the range of 37 to 64 zero-vehicle households per square mile. Lastly, there were ten block groups ranked "5" which ranged from 75 to 370 zero-vehicle households per square mile.

Table V-4
Zero-Vehicle Households Greatest Transit Needs Ranges (HH/sq. mi.)

Ranking	2010		2020		2035	
	Block Groups	Range	Block Groups	Range	Block Groups	Range
1	14	Under 1	13	Under 1	13	Under 1
2	14	1 to 5	13	1 to 5	12	1 to 5
3	9	6 to 28	9	6 to 24	8	6 to 24
4	9	37 to 64	9	30 to 74	10	25 to 55
5	10	75 to 370	12	75 to 436	13	82 to 482

Source: LSC, 2010.

Table V-5 provides similar information, but related to the elderly population (age 60 and older) instead of zero-vehicle households. Category "1" includes 11 block groups that ranged from one to 20 elderly individuals per square mile. Block groups ranked "2" ranged between 24 and 70 elderly individuals per square mile and included 11 block groups. Ranking "3" included a total of 12 block groups that ranged from between 73 and 153 elderly individuals per square mile. Ranking "4" included a total of ten block groups ranging between 232 and 432 elderly individuals per square mile. Finally, there were 12 block

groups assigned a ranking of "5" which had between 500 and 1,770 elderly individuals per square mile.

Table V-5
Elderly Population Greatest Transit Needs Ranges (persons/sq. mi.)

Ranking	2010		2020		2035	
	Block Groups	Range	Block Groups	Range	Block Groups	Range
1	11	1 to 20	10	1 to 20	8	1 to 20
2	11	24 to 70	10	21 to 70	10	21 to 63
3	12	73 to 153	11	81 to 153	13	76 to 169
4	10	232 to 432	11	170 to 452	11	188 to 500
5	12	500 to 1,770	14	508 to 2,087	14	563 to 2,309

Source: LSC, 2010.

Table V-6 provides information on the ranking for mobility-limited individuals. As shown in the table, ranking "1" includes a total of 15 block groups that had between 0.0 and 9.0 mobility-limited individuals per square mile. Block groups ranked "2" included between 11 and 22 mobility-limited individuals per square mile and comprise eight block groups. Ranking "3" included 12 block groups ranging from 32 to 72 mobility-limited people per square mile. There were a total of 10 block groups ranked "4" which ranged from 77 to 171 mobility-limited passengers per square mile. The last ranking group—which represents block groups assigned a value of five—had 11 block groups with between 183 and 611 mobility-limited individuals per square mile.

Table V-6 Mobility-Limited Population Greatest Transit Needs Ranges (persons/sq. mi.)						
Ranking	2010		2020		2035	
	Block Groups	Range	Block Groups	Range	Block Groups	Range
1	15	0 to 9	14	0 to 9	13	0 to 9
2	8	11 to 22	9	10 to 26	13	10 to 47
3	12	32 to 72	13	37 to 96	9	50 to 94
4	10	77 to 171	8	100 to 179	9	106 to 198
5	11	183 to 611	12	201 to 720	12	201 to 720
Source: LSC, 2010.						

Table V-7 shows information for the last transit-dependent population to be discussed, individuals living below the poverty line. As shown in the table, there were 12 block groups given a ranking of "1." These block groups had zero to 11 individuals living below the poverty line per square mile. Thirteen block groups were assigned a value of "2" and had a range of 13 to 64 low-income individuals per square mile. Ranking "3" represents block groups that had between 78 and 272 individuals living below the poverty line and contains 12 block groups. Nine block groups were ranked "4" and had a range of 310 to 475 individuals living below the poverty line per square mile. Lastly, ten block groups received a ranking of "5" meaning that they had between 526 and 1,158 individuals per square mile living below the poverty line.

Table V-7 Low-Income Population Greatest Transit Needs Ranges (persons/sq. mi.)						
Ranking	2010		2020		2035	
	Block Groups	Range	Block Groups	Range	Block Groups	Range
1	12	0 to 11	11	0 to 8	11	0 to 8
2	13	13 to 64	12	13 to 61	10	15 to 61
3	12	78 to 272	11	68 to 261	12	66 to 189
4	9	310 to 475	12	294 to 560	10	289 to 551
5	10	526 to 1,158	10	620 to 1,365	13	573 to 1,510
Source: LSC, 2010.						

TCRP RURAL DEMAND METHODOLOGY

Program Trips

A methodology developed as part of a Transit Cooperative Research Program (TCRP) project exists that allows us to forecast program trips for market segments of the population. Program trips are trips that occur because of the presence of specific social service programs including Head Start, day habilitation services, and senior living centers.

Census information was gathered on various segments of the population, including individuals of specific ages and by type of disability. These populations for each county are then used to forecast the number of participants in a specific program. The TCRP methodology has a trip rate for each type of program that allows us to calculate the approximate number of trips that will be provided. Table V-8 shows the total number of estimated annual one-way program trips as 573,859 for 2010.

Table V-8
TCRP Methodology - Program Trips

Program Type	Estimated # of Participants		Annual One-Way Trips
Developmental Services			
Adult	164	pp	58,792
Case Management	90	pp	3,547
Pre-school -- 3 to 5 yrs	61	pp	13,646
Head Start	502	pp	132,066
Job Training	304	clients	41,646
Mental Health Services	542	clients	188,067
Nursing Home	112	pp	1,015
Senior Nutrition	281	pp	73,782
Sheltered Workshop	79	pp	30,193
Group Home	51	pp	31,107
Program Trips			**573,859**

Source: LSC, 2010.

Program trips were also estimated for 2020 and 2035 based on the population growth of the area. The estimated number of annual program trips for 2020 is 649,239. This represents a growth of approximately 14 percent from 2010 estimates. The annual number of program trips in 2035 is projected to be 745,436.

The model first uses a formulaic method to estimate the number of clients in each program, based on census information. Once the estimated number of clients is determined, a standard trip rate is applied to each of the client subcategories to determine the annual ridership for each program. Table V-9 shows the trip rates that are used to calculate potential trips for each type of program.

As shown in the table, nursing homes have the lowest trip rate, with only about 9.1 trips per participant annually. Conversely, group homes have the highest amount of trips, with 615 trips per participant annually. While this number may seem fairly high, it relates to residential group home trips (generally provided by staff at the home with a van) in the amount of 1.7 daily trips. Adult developmental service programs have a trip rate of 358 annual trips, relating to day programs and other services for individuals with developmental disabilities.

Table V-9

Program Clients and Trip Rates

Program	Clients*			Trip Rate Used
	2010	2020	2035	
Developmental Services				
Adult	164	188	218	358
Case Management	90	104	120	39.2
Pre-school -- 3 to 5 yrs	61	70	81	224
Head Start	502	570	652	263
Job Training	304	348	403	137
Mental Health Services	542	621	718	347
Nursing Home	112	128	148	9.1
Senior Nutrition	281	322	372	263
Sheltered Workshop	79	87	96	384
Group Home	51	58	67	615

**Note: Client numbers are rounded in this table, but carried in subsequent computations.*
Source: LSC, 2010.

COMMUTER DEMAND

The demand estimation technique established by the TCRP B-36 project involves applying a trip rate to the number of workers traveling between regions for work. The TCRP B-36 project was developed to update various demand models that had previously been established. The trip rate that was developed was done using a peer community analysis with data from across the country. The resulting formula is as follows:

Commuter trips by transit from Region A to Region B = 0.012 x person work trips

This formula breaks down to roughly one transit trip for every 83 trips into the region for work. Since most individuals need to make two commute trips daily, this breaks down to roughly one transit trip for every 42 workers traveling to the region for work. Census LED data were used to determine how many individuals were commuting between major destinations. Table V-10 shows the estimated daily trips that could be captured by individuals either leaving or entering Farmington for employment. This estimation technique predicts 158 daily riders between the four locations, with the distribution between the locations being fairly even. Capturing this number of riders would result in over 39,500 annual trips for commuters.

Table V-10
Estimated 2008 Daily Commute Trips Between Major Destinations

Commute Pair	Commuters	Daily Trips	Annual Trips
Farmington-Aztec	2,492	60	14,952
Farmington-Bloomfield	2,105	51	12,630
Farmington-Kirtland	1,967	47	11,802
Total	**6,564**	**158**	**39,384**

Source: TCRP Project B-36; LSC, 2010.

DEMAND AND EXISTING SERVICE

Looking at the previously mentioned commuter trip estimates, the regional routes are underperforming the estimates. The Bobcat Route is currently capturing around 39 percent of the predicted demand. Conversely, the Tiger Route is only capturing around 17 percent of the estimated demand. Lastly, the Bronco Route serves approximately 27 percent of commute demand. Since these routes only operate three times daily, it is certainly reasonable to expect a higher mode split to be able to be reached if frequency were increased.

Comparing the 2010 Greatest Transit Needs map to the current route structure shows that the majority of the census block groups considered in high need of transit service are covered by the Farmington routes. Because the city routes cover a significant geographic area, there is a lot of coverage of the greatest transit need block groups. One area that does not appear to be served is the far western portion of the city, which scored a four in our analysis. This could be one area that is a priority during service expansion.