



Data Points



...connecting the dots

August 2008

Capital Area Congestion

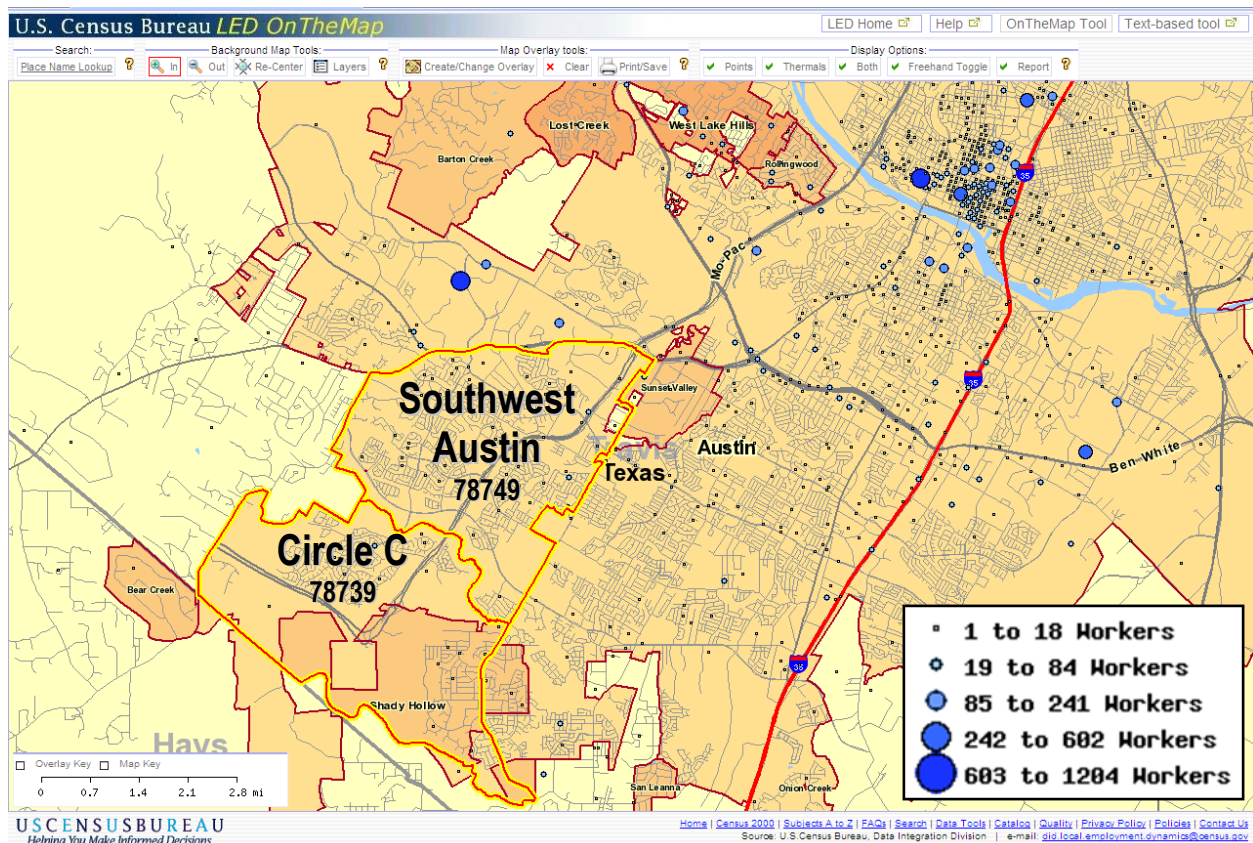
Analyzing Our Region's Commuter Sheds

Written by Sean Moran, CAPCOG Regional Planning Director and Stephen Allen, CAPCOG Planning Intern

You don't need data to tell you that we love driving our cars...just jump on MOPAC during the morning commute. Chances are you'll be locked in bumper to bumper traffic with all the other single occupancy vehicles. But data can help us understand *why* we are locked in traffic and *what* we can do about it.

The Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) Program publishes commute and labor shed data as part of their Quarterly Workforce Indicators. This data allows users to identify where Capital Area residents live and work. For example, you can perform an analysis that identifies where residents of the 78704 ZIP code work (i.e. the commute shed for South Austin). Likewise, you can perform an analysis that identifies where workers in the 78701 ZIP code live (i.e. the labor shed for Downtown Austin). Armed with this data, it becomes clear why we have congestion.

For example, this data tell us that 17,324 workers live in Circle C and Southwest Austin (i.e. the 78739 and 78749 ZIP codes), but only 296 (or 1.7%) actually work there. The other 98.3% of these residents must commute out of the 78739 and 78749 ZIP codes to go to work. Where do they go? You can find the majority of these residents stuck in traffic on MOPAC or South Lamar as they commute into Downtown Austin during the morning. The US Census Bureau's LED OnTheMap online tool (<http://lehdmap2.did.census.gov/>) maps the Circle C and Southwest Austin commuter shed. It clearly illustrates how congested bottlenecks are created as morning commuters cross Lady Bird Lake to reach their jobs in Downtown Austin.



Circle C and Southwest Austin Commute Shed



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What is the source for the Census Bureau data? The LEHD Program utilizes noise addition methodology to combine state unemployment insurance wage record and ES202 data with core Census Bureau censuses and surveys. The process results in 'modeled' datasets that provide State and local authorities detailed local information about their economies while protecting the confidentiality of people and firms that provide the data.

Last year, CAPCOG Planner Chris Ramser introduced us to the LED OnTheMap online tool as the basis for his Data Points article, *Defining Where We Live and Work in the Capital Area*. He utilized the LEHD data to create a commute shed for selected cities in Central Texas. The results identified those local economies that are more dependent on Austin (i.e. Cedar Park, Round Rock, and Leander) and those that are less dependent (i.e. Georgetown, San Marcos, and Marble Falls).

Chris' analysis piqued our interest. What if we could build a commute shed matrix by ZIP code for our entire region? The results might give us some insight into why certain areas are more congested than others. It might also help identify ride sharing or transit opportunities. CAPCOG staff contacted the Census Bureau's Cornell Research Data Center to get the commute shed data by Census block for the Capital Area. We then assimilated the block data by ZIP code. The resulting dataset reveals some interesting patterns.

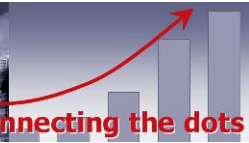
The table below represents the top ten commute sheds by ZIP code pair. Not surprisingly, almost half of all residents in the top ten commute sheds work in Downtown Austin. But once you look past this obvious trend, a few surprises emerge. A significant number of Round Rock residents work in Georgetown. Most people view Round Rock as a suburb of Austin, but this data suggests that our suburban and rural economies have strong connections with each other, too.

Another exciting top ten trend is the inclusion of three communities where a significant number of residents live and work in the same ZIP code. San Marcos, Taylor, and Georgetown represent communities that include a healthy balance of residences and jobs. This means fewer vehicles miles traveled (VMT) and less congestion for the residents of these communities.

Top Ten Commute Sheds in the Capital Area in 2004 by ZIP Code Pair

HOME COMMUNITY ZIP Code	WORK COMMUNITY ZIP Code	JOBS
San Marcos 78666	San Marcos 78666	7921
Austin - Sunset Valley 78745	Austin - Downtown 78701	3380
Austin - South Austin 78704	Austin - Downtown 78701	2826
Austin - Southwest Austin 78749	Austin - Downtown 78701	2306
Round Rock 78664	Georgetown 78626	2208
Taylor 76574	Taylor 76574	2192
Georgetown 78626	Georgetown 78626	2177
Austin - Northwest Hills 78759	Austin - Downtown 78701	2170
Pflugerville 78660	Austin - Downtown 78701	2155
Round Rock - RR West 78681	Georgetown 78626	2073

So which of our communities have an economy that supports a significant number of residences and jobs? The table below represents the top ten home-work ZIP codes in the Capital Area.



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Top Ten Home-Work ZIP Codes in the Capital Area in 2004

COMMUNITY ZIP Code	Jobs
San Marcos 78666	7921
Taylor 76574	2192
Georgetown 78626	2177
Austin - Northwest Hills 78759	2170
Marble Falls 78654	2064
Bastrop 78602	1909
La Grange 78945	1890
Austin - Hyde Park 78705	1848
Pflugerville 78660	1803
Austin - South Austin 78704	1731

Unexpectedly, the top home-work ZIP code in Austin is Northwest Hills near the Arboretum. The 78759 ZIP code includes a significant amount of commercial development along Loop 360 and US 183. The commercial development is surrounded by single family detached and multi-family housing. While residents of Northwest Hills may drive less than residents of Circle C, they are probably still making a significant contribution to congestion at the intersection of Loop 360 and US 183. Living close to where we work can reduce VMTs, but there must be a more logical connection between residents and employers if we are going to truly reduce the number of vehicles on the road.

Austin ZIP codes Hyde Park (i.e. University of Texas) and South Austin round out the top ten list. Arguably, residents of these ZIP codes have more transportation modes available to them (e.g. frequent transit, safer biking routes, and pedestrian friendly sidewalks) than Northwest Hills. In 2004, residents of Hyde Park spent \$1,318 per household (HH) on gasoline, residents of South Austin spent \$2,174 per HH, and residents of Northwest Hills spent \$3,523 per HH. This ESRI Business Analyst Online data suggests that Northwest Hills residents are very dependent on their vehicles to get to work. Locating jobs and housing within close proximity will not necessarily reduce the number of vehicles on our roads. It must be done in a way that promotes alternative transportation modes and ultimately reduces congestion.

As the Capital Area welcomes the next 1.5 million residents, we'll need to continue building roads, expanding transit service, and promoting ride sharing and telecommuting. These are proven strategies that will help slow congestion. But we'll never actually reduce congestion unless we encourage a more focused growth pattern that incentivizes the integrated development of housing and jobs.

A selected list of commute sheds by ZIP code can be found on the following page. A more comprehensive list, including commute sheds for our entire region can be found on the Tabular Data page of the CAPCOG Information Clearinghouse.

Selected Commute and Labor Sheds by ZIP Code



Residents that live and work in the same ZIP code

Work ZIP Codes with greater than 10,000 workers

Work ZIP Code	Austin - Braker Lane 78758	Austin - Downtown 78701	Austin - East Riverside 78741	Austin - Hyde Park 78705	Austin - Jollyville 78729	Austin - Manchaca 78748	Austin - Northwest Austin 78727	Austin - Northwest Hills 78759	Austin - Old Enfield 78703	Austin - Onion Creek 78744	Austin - South Austin 78704	Austin - Southwest Austin 78749	Austin - Sunset Valley 78745	Austin - Tech Ridge 78753	Austin - Wells Branch 78728	Austin - West Lake Hills 78746	Bastrop 78602	Buda 78610	Cedar Park 78613	Elgin 78621	Georgetown 78626	Georgetown - Serenada 78628	Hutto 78634	Kyle 78640	Pflugerville 78660	Round Rock 78664	Round Rock - RR West 78681	San Marcos 78666	Taylor 76574
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Home ZIP Code	Primary Jobs	% Jobs in Home ZIP	21184	50422	7315	31412	4693	2701	6497	24520	21228	8560	17964	2387	9975	8298	14272	15913	4763	2302	4336	1180	21599	4052	1188	550	6301	8742	6110	15739	3698
Austin - Braker Lane 78758	14798	10.7%	1588	1426	147	1024	184	58	356	1277	733	147	434	69	183	511	593	409	23	33	114	10	289	28	14	2	303	259	175	71	24
Austin - Downtown 78701	1113	27.1%	33	302	25	174	5	3	7	55	68	6	58	4	21	4	22	48	1	3		20	1		1	7	6	4	11		
Austin - East Riverside 78741	10439	4.8%	277	1555	505	1421	31	88	83	270	655	397	772	74	349	168	121	322	36	46	67	6	39	13	12	12	78	51	73	107	9
Austin - Hyde Park 78705	3994	46.3%	57	472	40	1848	7	4	22	160	208	27	108	9	35	38	40	114	2	5	8	1	57	5		5	21	14	35	2	
Austin - Jollyville 78729	10870	3.5%	768	866	106	569	381	35	368	1147	324	116	303	37	113	216	494	365	12	14	183	4	739	40	16	1	117	179	185	51	24
Austin - Manchaca 78748	11912	2.8%	266	1844	350	696	57	329	84	352	1066	526	864	151	679	134	115	576	37	100	33	3	71	13	4	17	43	65	74	319	11
Austin - Northwest Austin 78727	11515	3.8%	990	1102	106	715	174	26	435	1212	494	119	323	36	109	298	618	408	12	14	73	7	593	39	8		192	194	138	44	25
Austin - Northwest Hills 78759	15738	13.8%	1050	1690	203	1499	202	41	326	2170	778	138	429	52	139	297	574	705	24	13	100	4	699	32	9		140	147	126	61	21
Austin - Old Enfield 78703	6456	11.7%	177	1139	62	1224	20	14	70	375	758	62	281	17	82	65	132	365	13	4	15	6	153	6	5	5	10	16	9	58	7
Austin - Onion Creek 78744	10934	6.4%	330	1557	318	560	56	200	75	274	918	705	730	112	767	199	106	341	32	83	50	6	72	30	25	12	76	101	85	108	10
Austin - South Austin 78704	15546	2.6%	401	2826	327	1428	65	103	111	610	1460	441	1731	85	426	179	187	816	45	72	42	2	137	19	8	11	66	64	48	172	8
Austin - Southwest Austin 78749	14037	1.8%	268	2306	606	913	46	166	98	537	1319	385	833	250	518	158	107	1080	33	39	36	1	85	10	7	3	24	49	57	236	7
Austin - Sunset Valley 78745	20651	7.5%	577	3380	469	1263	92	318	140	572	1814	730	1663	290	1556	321	169	929	67	176	80	15	120	29	9	18	117	122	99	319	12
Austin - Tech Ridge 78753	13539	5.6%	1117	1467	116	713	165	44	261	752	732	196	444	50	212	753	575	306	32	20	104	17	317	24	39	4	287	258	207	51	36
Austin - Wells Branch 78728	7876	9.4%	675	682	139	382	95	23	209	715	214	104	222	17	75	215	739	204	11	2	74	3	429	44	11	2	254	234	126	26	18
Austin - West Lake Hills 78746	8264	14.2%	282	1216	170	1430	37	23	76	475	450	108	337	35	136	75	144	1171	28	16	13	4	130	6	2	3	27	24	27	74	12
Bastrop 78602	5045	37.8%	58	496	114	117	24	25	20	83	74	146	104	10	84	66	28	55	1909	16	21	69	27	5	9	5	14	40	12	58	48
Buda 78610	5900	7.0%	92	790	198	246	18	120	27	137	244	204	328	54	282	68	55	140	25	415	21	13	23	16	7	45	11	42	19	810	11
Cedar Park 78613	15055	6.0%	815	1094	128	557	393	31	357	1251	279	137	300	69	171	260	663	544	13	12	904	10	1899	123	33	3	155	366	275	46	42
Elgin 78621	3692	15.7%	140	369	33	125	14	16	40	81	57	38	94	7	42	77	52	38	458	4	9	579	56	4	27	7	64	84	27	14	76
Georgetown 78626	8913	24.4%	426	453	45	215	110	12	95	298	71	65	163	11	66	139	364	103	14	13	91	6	2177	1666	32	1	94	418	260	27	89
Georgetown - Serenada 78628	5696	13.1%	229	186	29	88	52	6	81	208	58	43	65	13	47	101	243	42	8	8	68	4	1724	744	60	1	100	296	212	20	83
Hutto 78634	1861	4.9%	96	134	13	47	28	3	38	78	15	25	41	1	17	35	120	27	2	4	26	7	235	32	91		72	174	62	11	46
Kyle 78640	4905	2.6%	125	448	109	186	15	86	29	74	141	177	244	41	249	60	31	108	21	295	21	9	16	14	13	127	35	36	42	1090	2
Pflugerville 78660	18757	9.6%	1357	2155	257	794	238	43	369	1204	394	238	520	65	226	568	1139	345	48	28	136	20	810	79	75	2	1803	553	343	61	96
Round Rock - RR West 78681	15224	6.0%	1120	1012	137	491	286	35	325	1152	183	106	284	37	166	366	1288	326	21	19	186	9	2073	144	40	4	266	919	836	67	116
Round Rock 78664	19804	4.8%	1299	1373	154	495	304	40	375	1285	295	208	441	50	207	419	1976	283	28	30	213	17	2208	194	180	5	594	1913	949	98	152
San Marcos 78666	11754	67.4%	132	419	75	162	20	36	59	91	127	130	152	31	157	61	42	111	40	223	20	5	33	7	6	93	25	39	52	7921	8
Taylor 76574	5623	39.0%	146	261	13	92	108	6	70	118	27	51	75	9	32	78	202	43	28	3	24	59	518	64	171		108	218	139	28	2192

Home ZIP Codes with greater than 10,000 resident workers

For Example: In 2004, 146 Taylor residents worked near Braker Lane

Source: US Census Bureau, Longitudnal Employer-Household Dynamics, <http://lehd.did.census.gov/led/>, 2004. LEHD is an innovative program within the U.S. Census Bureau. The program utilizes noise addition methodology to combine state unemployment insurance wage record and ES202 data with core Census Bureau censuses and surveys. This process results in 'modeled' datasets that provide State and local authorities detailed local information about their economies while protecting the confidentiality of people and firms that provide the data. For more information, see Filling Data Gaps, The LEHD Partnership brochure at <http://lehd.did.census.gov/led/about-us/brochure.pdf>. Note: The Cornell Research Data Center, administered by the US Census Bureau's Center for Economic Studies, provided the data to CAPCOG by Census block. CAPCOG converted the polygonal block data to points and then assimilated the data by ZIP code.