

MEMORANDUM

TO: LSA Associates, Inc.
FROM: Jonathan Chambers, P.E.
DATE: October 6, 2014
RE: Estimation of Average Trip Lengths
To and From Century City Center
Century City, California

Ref: J1076

This memorandum was prepared to document the methodology used to estimate average trip lengths for trips made to and from Century City Center. The estimates were based on residential zip code data provided by the Century City Chamber of Commerce in year 2011 for approximately 4,600 employees working within Century City. This data covers a wide cross-section of employees in Century City and is generally applicable to any office building in Century City, including the proposed Century City Center at 1950 Avenue of the Stars.

The residential zip code data provided by the Century City Chamber of Commerce was used to determine the length of Commercial-work (C-W) trips to and from Century City. C-W trips comprise the majority of peak hour trips generated by an office building in Century City. Other daily trips often consist of trips to business meetings and trips to lunch, both of which are generally a shorter distance than commute trips. Therefore, using the results of this residential zip code analysis (C-W trips) as a proxy for the length of all trips to and from Century City Center is a conservative assumption, likely overstating the actual average trip length.

Distance to Employee Residences

The zip code data was plotted onto a map using GIS and was analyzed to determine how far the employees had to drive to Century City for work. A series of concentric rings centered on Century City were drawn over the map at various radii, including 2 miles, 5 miles, 10 miles, 15 miles, 20 miles, 25 miles, 40 miles, and 60 miles. The number of zip code data points within each radius band was totaled, representing the number of employees living within that range of distance (i.e., 2 to 5 miles) from Century City. Figures 1 and 2 show this distribution on a regional and local basis, respectively. The raw data is provided in the Attachment.

Table 1 below summarizes the results of that analysis.

Table 1 – Straight-Line Distance to Employee Residences

Radius (miles)	# of Employees	Percentage
0 - 2	432	9.4%
2 - 5	1,390	30.3%
5 - 10	1,142	24.9%
10 - 15	644	14.0%
15 - 20	383	8.3%
20 - 25	251	5.5%
25 - 40	275	6.0%
40 - 60	73	1.6%
Total	4,590	

As shown, the survey included a total of 4,590 employees living within 60 miles of Century City. By analyzing the percentage of employees living within each band, the data show that approximately 65% of all Century City employees live within 10 miles of Century City and nearly 80% live within 15 miles.

It is important to note that these distances represent straight-line distance (“as the crow flies”), rather than actual driving distance. In practice, driving distance may be somewhat longer than the straight-line distance to any location. As described below, to address this issue, a conservative assumption of distance was applied that likely overstates actual driving distance for most employees.

Driving Distance Estimates

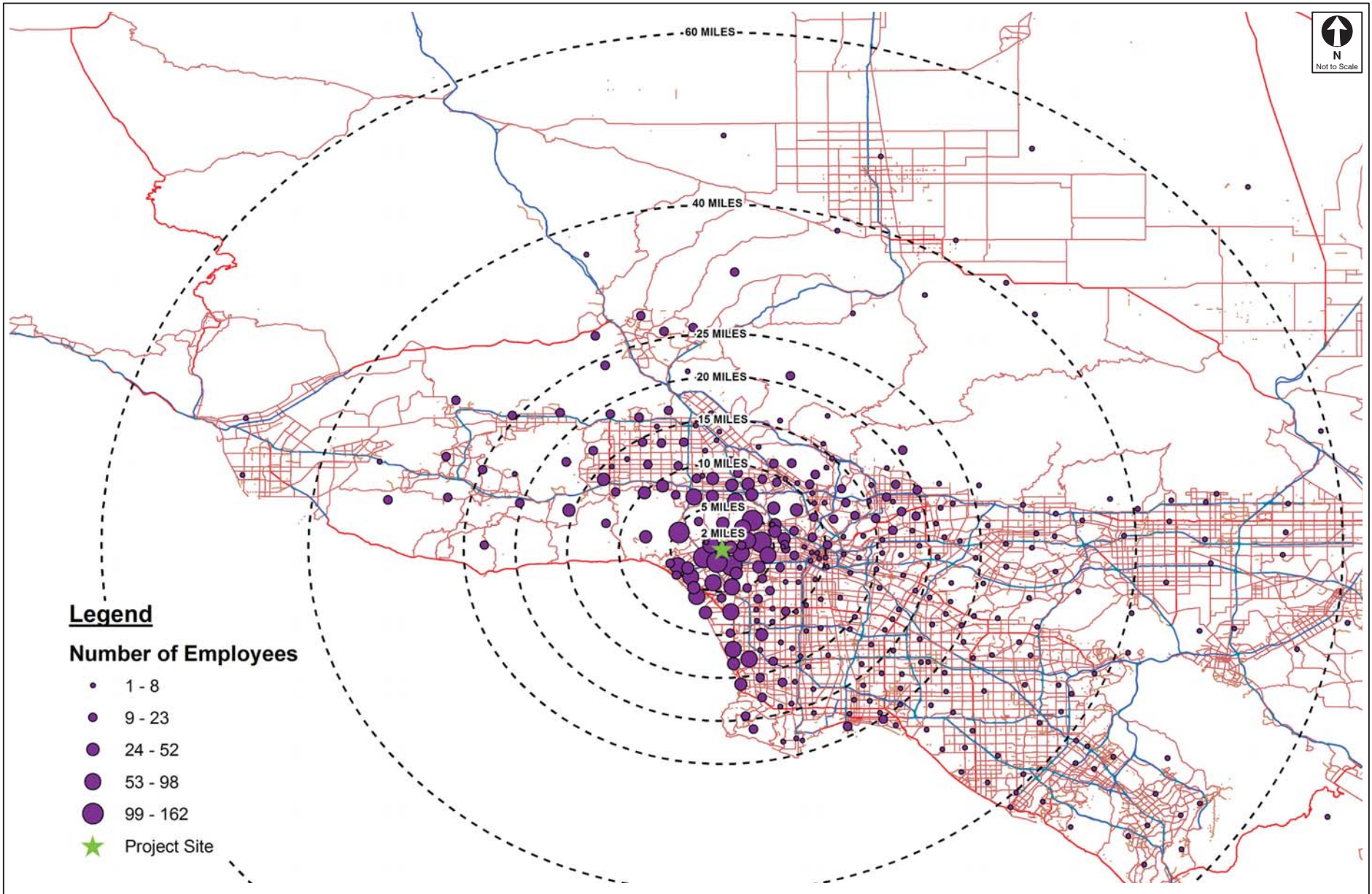
An assumption was made for each distance category as to how far each employee would likely have to drive in order to reach Century City. Each employee was conservatively assumed to drive the distance of the upper range of his distance category. For example, all of the 1,390 employees living between two and five miles from Century City were assumed to have to drive five miles each way for work. This same assumption was applied to each distance category as demonstrated below. This is a conservative assumption as it is likely that many people drive a distance nearer to the lower end of their distance categories.

Table 2 shows the driving distance assumption for each distance category as well as the cumulative total number of one-way miles driven by the workers in that category.

Table 2 – Distance Assumption and Total Miles Driven

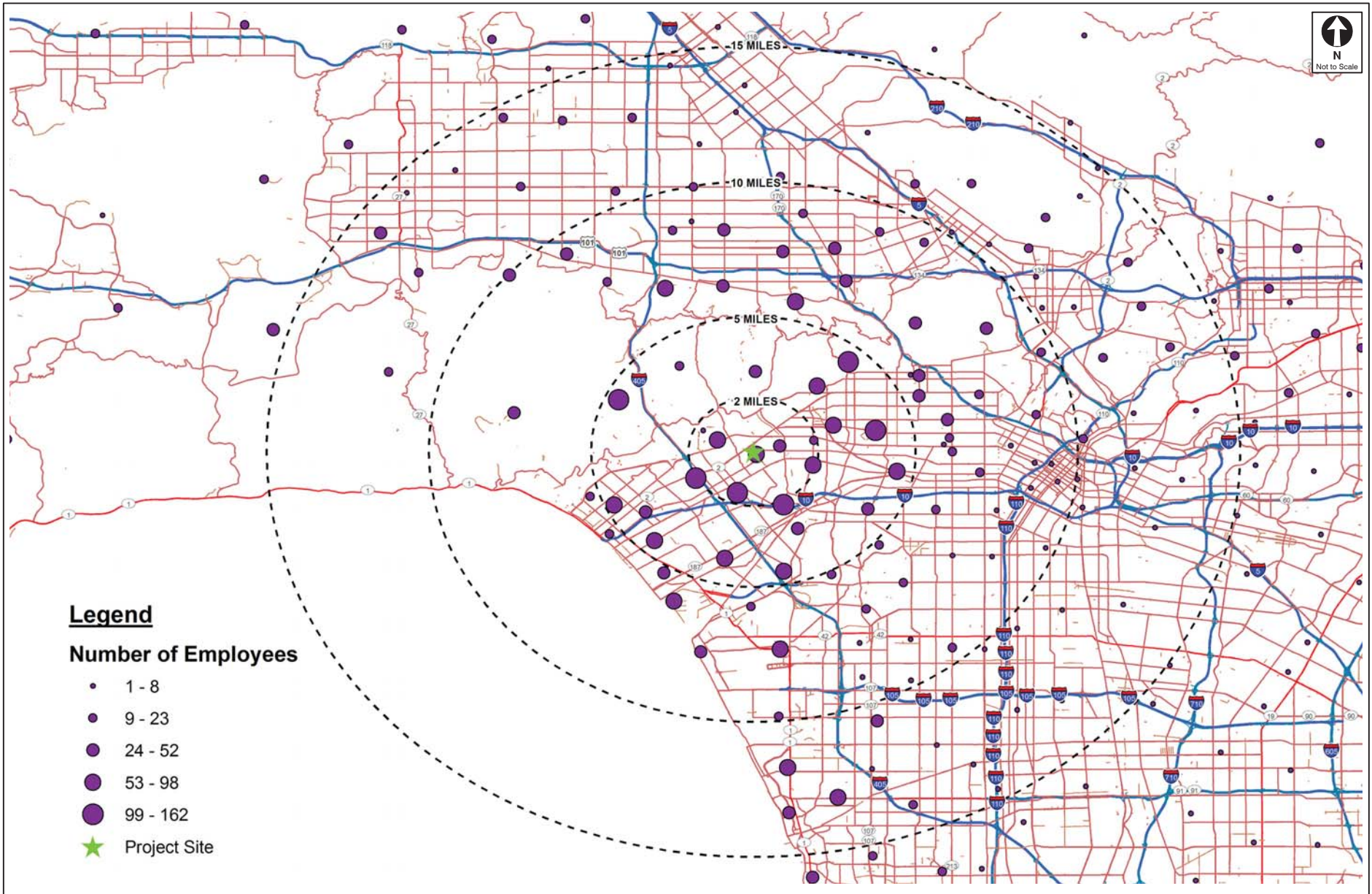
Radius (miles)	# of Employees	Percentage	Assumed Distance	Total Miles Driven
0 - 2	432	9.4%	2	864
2 - 5	1,390	30.3%	5	6,950
5 - 10	1,142	24.9%	10	11,420
10 - 15	644	14.0%	15	9,660
15 - 20	383	8.3%	20	7,660
20 - 25	251	5.5%	25	6,275
25 - 40	275	6.0%	40	11,000
40 - 60	73	1.6%	60	4,380
Total	4,590			58,209
			Overall Average Distance	12.7

As shown in Table 2, the overall average distance each employee drives (one way) for work each day is approximately 12.7 miles. As described above, because this analysis only considers commute trips and excludes typically shorter mid-day trips such as for business meetings or lunches, it represents a conservative estimate for the average trip length for office buildings in Century City.



DISTRIBUTION OF CENTURY CITY EMPLOYEE RESIDENCES BY ZIP CODE - REGIONAL

FIGURE
1



DISTRIBUTION OF CENTURY CITY EMPLOYEE RESIDENCES BY ZIP CODE - LOCAL

FIGURE
2

Attachment
Zip Coda Data

Zip Code	Number of Employees	Zip Code	Number of Employees	Zip Code	Number of Employees	Zip Code	Number of Employees	Zip Code	Number of Employees	Zip Code	Number of Employees
90274	10	92694	1	92804	1	91206	16	91724	1	91354	18
90275	16	92530	1	92805	2	90005	20	91740	2	91390	11
90505	10	92563	1	92833	1	90006	12	91767	3	93510	1
90710	3	90720	2	92865	1	90007	4	91773	6	93534	1
90717	2	90815	6	92831	1	90010	1	91786	2	93535	1
90731	7	90740	1	92835	2	90013	4	91701	2	93536	5
90732	3	90008	18	92807	2	90014	6	91737	2	93550	4
90733	1	90037	6	92887	1	90015	1	91761	1	93551	5
90744	1	90043	23	92626	4	90018	15	91764	3	93552	2
90755	2	90062	6	92627	1	90020	20	92335	1	91311	19
90802	9	90044	7	92646	2	90021	1	92336	3	91355	16
90804	4	90047	16	92648	3	90022	3	92337	1	91381	18
90806	3	90001	3	92660	1	90033	2	92324	2	90069	86
90813	2	90003	3	92663	1	90057	7	92407	1	90077	18
90814	11	90011	4	92708	4	90063	5	92223	1	90210	29
90803	5	90023	4	92647	2	91754	7	92555	2	91316	30
90245	17	90059	1	92649	4	91755	4	92503	2	91335	15
90247	8	90061	4	92683	5	90012	11	92551	1	91403	54
90248	3	90255	2	92706	1	90017	6	92860	2	91406	23
90249	5	90262	1	92845	2	90071	1	92373	1	91411	15
90250	30	90280	6	92866	1	90004	33	92506	2	91436	21
90254	36	90040	2	92780	1	90026	21	92507	1	91401	35
90260	5	90606	2	92782	3	90028	31	93110	1	91402	7
90266	81	90640	4	92867	1	90029	10	90265	12	91405	11
90277	31	90660	8	92604	1	90038	25	90290	13	91408	1
90278	56	90240	4	92606	2	90039	14	91302	25	91505	23
90501	18	90241	3	92610	1	90065	12	91320	9	91605	10
90502	4	90242	2	92620	1	90078	1	91360	13	91606	13
90503	12	90670	1	92630	2	90031	4	91361	10	91423	50
90504	13	90650	5	92688	2	90032	5	91362	18	91601	30
90045	62	90701	2	90046	141	90042	18	93012	3	91602	26
90066	98	90703	5	90048	77	91030	11	93035	2	91604	55
90094	19	90706	3	90016	31	91108	9	93003	1	91607	27
90230	65	90723	2	90019	74	91801	14	93021	9	91506	10
90232	31	90805	1	90035	96	91803	6	93063	16	91501	18
90291	52	90807	6	90036	106	91706	2	93065	20	91502	4
90292	59	90712	1	90067	75	91723	1	91301	20	91504	13
90293	44	90713	3	90211	19	91731	1	91303	4	91324	11
90056	14	90808	3	90212	43	91732	3	91304	18	91325	15
90302	11	90601	3	90027	34	91733	4	91306	8	91326	13
90301	8	90602	1	90068	40	91744	3	91307	17	91331	5
90303	3	90603	2	91001	7	91746	1	91364	17	91334	1
90304	5	90604	3	91011	10	91770	4	91367	29	91340	3
90305	8	90605	1	91201	6	91775	9	91377	6	91342	13
90220	7	90631	1	91202	9	91776	3	90401	15	91343	17
90745	7	91709	5	91203	1	91780	3	90405	69	91344	21
90746	2	91710	4	91204	3	91790	4	90049	122	91345	1
90034	162	91745	6	91205	7	91791	6	90272	35	91352	5
90064	124	91748	3	91020	1	91006	5	90402	19	91394	1
93543	1	91765	1	91207	9	91007	5	90403	81	91321	6
93553	1	91789	1	91208	3	91016	3	90404	43	91350	15
92301	1	92821	3	90041	15	91024	1	90024	74	91351	10
92653	1	92880	2	91101	9	91107	16	90025	157	91387	9
92656	2	90621	1	91103	2	91702	2	90095	1	91040	4
92657	1	90623	5	91104	9	91711	2	91356	30	91042	4
92677	1	90630	1	91105	8	91750	2	93309	1	91214	7
92692	2	90638	3	91106	7	91784	1	91384	2		