

Monday, February 03, 2020 (Updated)

Jeanne Wolfenbarger, P.E.
Transportation Development Section
Planning Department
City of Albuquerque
600 Second St. SE
Albuquerque, NM 87102

Re: Lomas Car Wash (Lomas Blvd. West of Eubank Blvd.)

Dear Jeanne:

This letter of analysis is intended for the purpose of providing the City of Albuquerque with sufficient traffic data / analysis in order to determine the feasibility of allowing an eastbound left-turn-in at the existing right-in, right-out driveway at the new (remodeled) car wash facility on the north side of Lomas Blvd. approximately 480 feet west of Eubank Blvd. (centerline to centerline). The data / analysis provided in this letter of analysis includes:

- 1) Recent AM and PM Peak Hour turning movements volumes at the signalized intersection of Lomas Blvd. / Eubank Blvd.
- 2) Trip generation calculation to estimate the new trips that will be added to the roadway system as a result of implementation of the car wash.
- 3) Trip distribution calculations to approximate the origin-destination of the trips generated by the subject car wash facility.
- 4) Car Wash trips were added to the AM and PM Peak Hour volumes at the signalized intersection of Lomas Blvd. / Eubank Blvd. Analysis of the AM and PM Peak Hour BUILD Condition volumes at Lomas / Eubank was performed utilizing Synchro 10 software (by Trafficware). Synchro 10 utilizes HCM, 6th Edition methodology to analyze signalized intersections. Of particular concern are the operational levels-of-service at the signalized intersection, but more importantly, the calculated 95th Percentile Queue lengths for each lane group. The calculated 95th Percentile Queue length for each lane group was determined utilizing HCM, 6th Edition methodology for calculating queuing lengths at signalized intersections.
- 5) Unsignalized intersection analysis for the AM and PM Peak Hour BUILD conditions was performed to determine the operational levels-of-service for the proposed right-in, right-out, left-in only driveway.

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The attachments to this letter of study include:

Sheet A-1: Vicinity Map for project
 Sheet A-2: Aerial Photo of project area
 Sheet A-3: Traffic count worksheet (Lomas Blvd. / Eubank Blvd.)
 Sheet A-4: Trip generation table
 Sheet A-5: Trip distribution DASZ map
 Sheet A-6 thru A-9: Trip distribution calculation table
 Sheet A-10: Trip distribution map
 Sheet A-11: Trip assignments (% entering)
 Sheet A-12: Trip assignments (% exiting)
 Sheet A-13 thru A-17: Turning movements volume worksheets
 Sheet A-18 thru A-21: Synchro 10 Signalized Intersection Reports (HCM6)
 Sheet A-22 thru A-23: Synchro 10 Unsignalized Intersection Reports (HCM6)
 Sheet A- 24: Conceptual drawing of new eastbound left turn lane
 Sheet A-25 thru A-28: Aerial Photos of other major intersections along Lomas Blvd.

The signalized intersection analyses were performed using existing signal timing plan received from the City of Albuquerque's Traffic Operations Division (Traffic Signal Shop). The signalized intersection of Lomas Blvd. / Eubank Blvd. is a part of a coordinated traffic signal system interconnected along Eubank Blvd. in a north-south direction.

The AM / PM Peak Hour signalized intersection analyses reports for Lomas Blvd. / Eubank Blvd. are on Sheets A-17 through A-20 in the attached Appendix. The following table summarizes the calculated levels-of-service and delays for the intersection:

Lomas / Eubank	2019 AM Peak Hour		2019 PM Peak Hour	
	LOS – Delay	95 th % Queue	LOS – Delay	95 th % Queue
EB LT	E – 59.8	113	E – 59.6	195
EB Thru	D – 41.1	148	D – 50.5	355
EB RT	D – 41.9	158	E – 56.7	380
WB LT	D – 49.7	253	E – 63.8	283
WB Thru	D – 40.6	348	D – 38.0	225
WB RT	D – 43.5	370	D – 38.7	230
NB LT	E – 64.6	163	E – 60.3	90
NB Thru	C – 23.1	260	C – 33.2	463
NB RT	B – 11.7	118	B – 16.1	180
SB LT	D – 54.8	90	F – 137.4	285
SB Thru	D – 36.5	533	C – 29.8	403
SB RT	D – 42.6	570	C – 31.8	425

The area of concern is focused on the eastbound approach on Lomas Blvd. at Eubank Blvd. The maximum calculated eastbound queue length (95th Percentile) is 380 feet. The

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proposed left-turn-in to the car wash driveway is approximately 410 feet west of the eastbound stop bar on Lomas Blvd. at Eubank. Therefore, there is approximately 410 feet of queuing storage available for eastbound Lomas Blvd. between the Eubank Blvd. eastbound stop bar and the driveway location. However, this letter of analysis recommends that a 150 feet long eastbound left turn lane plus transition be constructed on Lomas Blvd. at the Car Wash driveway location. Eastbound traffic on Lomas Blvd. desiring to travel to the new car wash will transition into the eastbound left turn lane approximately 150 to 250 feet west of the actual driveway location. It is proposed that the eastbound left turn lane will be separated from the eastbound thru lanes by a narrow raised median (approximately 1 feet to 2 feet wide). The westernmost 50 feet of the raised median should be roll curb and the remainder should be median curb. Thus left turn car wash traffic will transition into the eastbound left turn lane and be separated from the thru lanes approximately 560 feet west of the eastbound stop bar on Lomas Blvd. at Eubank Blvd. Therefore, the design will allow for 560 feet of eastbound queuing on Lomas Blvd. at Eubank Blvd. before the left turn entrance is in danger of being blocked. The maximum 95th Percentile eastbound queue on Lomas at Eubank is 380 feet. Therefore, it is extremely unlikely that the eastbound queuing on Lomas Blvd. at the new left-in access to the new driveway will interfere with the car wash traffic and vice versa.

The unsignalized intersection analyses (Synchro 10, HCM6) also was evaluated for the 2019 AM and PM Peak Hour BUILD conditions associated with this proposal. The following table summarizes the results of the driveway analyses:

Lomas / Dwy.	2019 AM Peak Hour		2019 PM Peak Hour	
	LOS – Delay	95 th % Queue	LOS – Delay	95 th % Queue
EB LT	C – 21.5	<25	B – 12.2	<25
EB Thru	N/A	N/A	N/A	N/A
EB RT	N/A	N/A	N/A	N/A
WB LT	N/A	N/A	N/A	N/A
WB Thru	N/A	N/A	N/A	N/A
WB RT	N/A	N/A	N/A	N/A
NB LT	N/A	N/A	N/A	N/A
NB Thru	N/A	N/A	N/A	N/A
NB RT	N/A	N/A	N/A	N/A
SB LT	N/A	N/A	N/A	N/A
SB Thru	N/A	N/A	N/A	N/A
SB RT	C – 17.6	<25	B – 11.9	<25

The calculated levels-of-service and delays for the driveway (especially the proposed eastbound left-turn-in movement) are acceptable. The calculated 95th Percentile queuing for the eastbound left turn movement are both less than 1 vehicle length for the AM Peak Hour and for the PM Peak Hour. Therefore, both are reported as less than 25 feet (the length of one vehicle) since a partial vehicle cannot queue.

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Ernest Armijo, P.E.

Monday, February 03, 2020 (Updated)

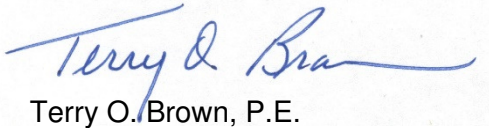
Re: Lomas Car Wash (Lomas Blvd. West of Eubank Blvd.)

Attached to this letter of analysis are four other major signalized intersections along Lomas Blvd. to the east and west of Eubank Blvd. that show access driveways along Lomas Blvd. relative to the major signalized intersections for comparative purposes. What we are proposing is consistent with other access along Lomas Blvd. close to major signalized intersections.

In summary, this letter of analysis finds that the implementation of the proposed eastbound left turn in to the east driveway of the new car wash facility on the north side of Lomas Blvd. west of Eubank Blvd. will have no significant adverse impact on the nearby traffic. The analysis finds the request for the eastbound left turn in at the driveway to be acceptable, and recommends that the City of Albuquerque approve the request with the provision that the eastbound left turn lane be constructed as described in this letter.

Please call me if you have questions.

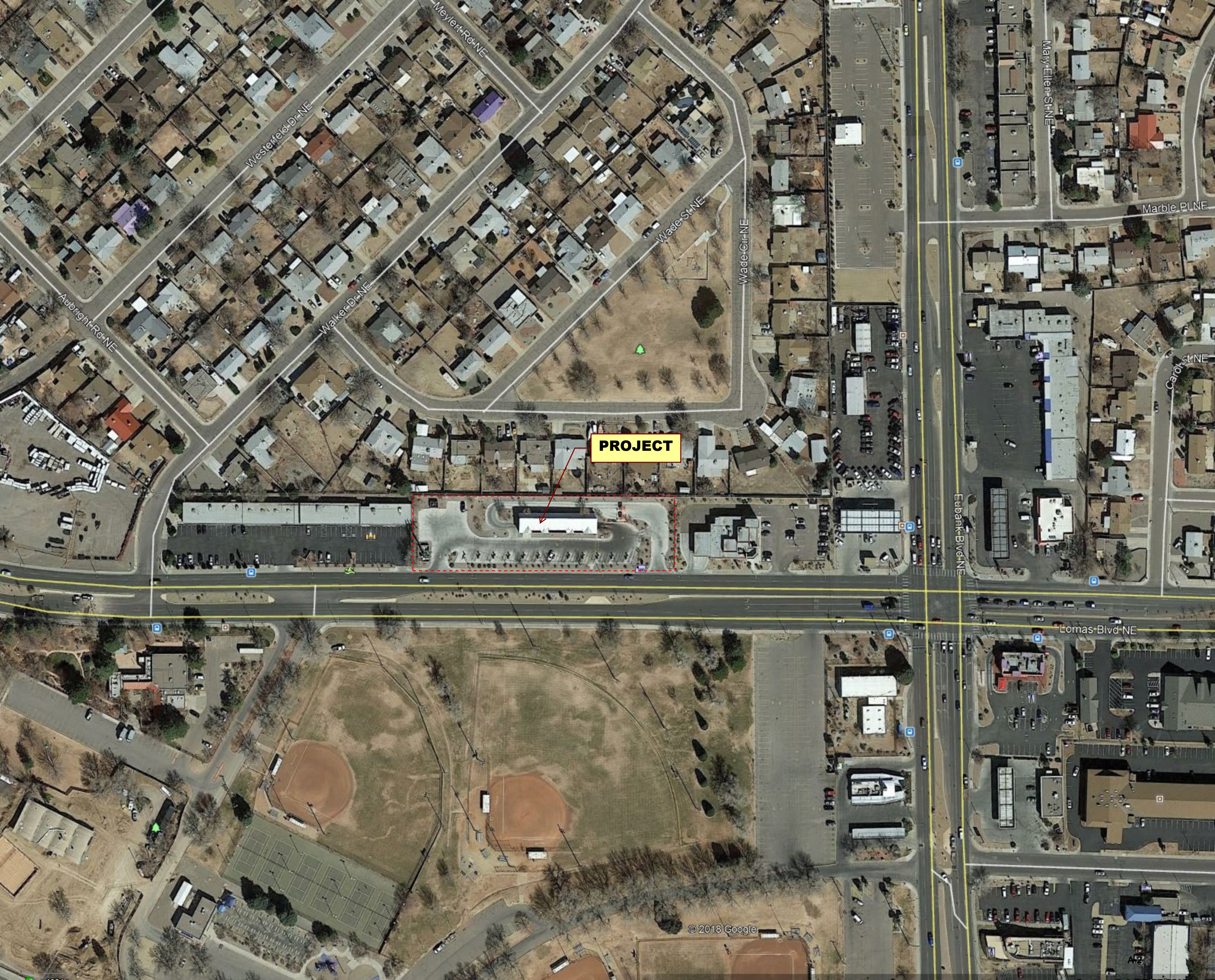
Best Regards,

A handwritten signature in blue ink that reads "Terry O. Brown". The signature is fluid and cursive, with the first and last names being more prominent.

Terry O. Brown, P.E.

attachments as noted

cc: Les LaMastus, LBJ Enterprises w/attachments
Jim Strozier, Consensus Planning w/attachments



PROJECT

Traffic Count Data Sheet

Year Counts Taken: 2018

E-W Street:
N-S Street:Lomas Blvd.
Eubank Blvd.Speed Limit (Lomas Blvd.)=
Speed Limit (Eubank Blvd.)=35 MPH
40 MPH
12/5/18

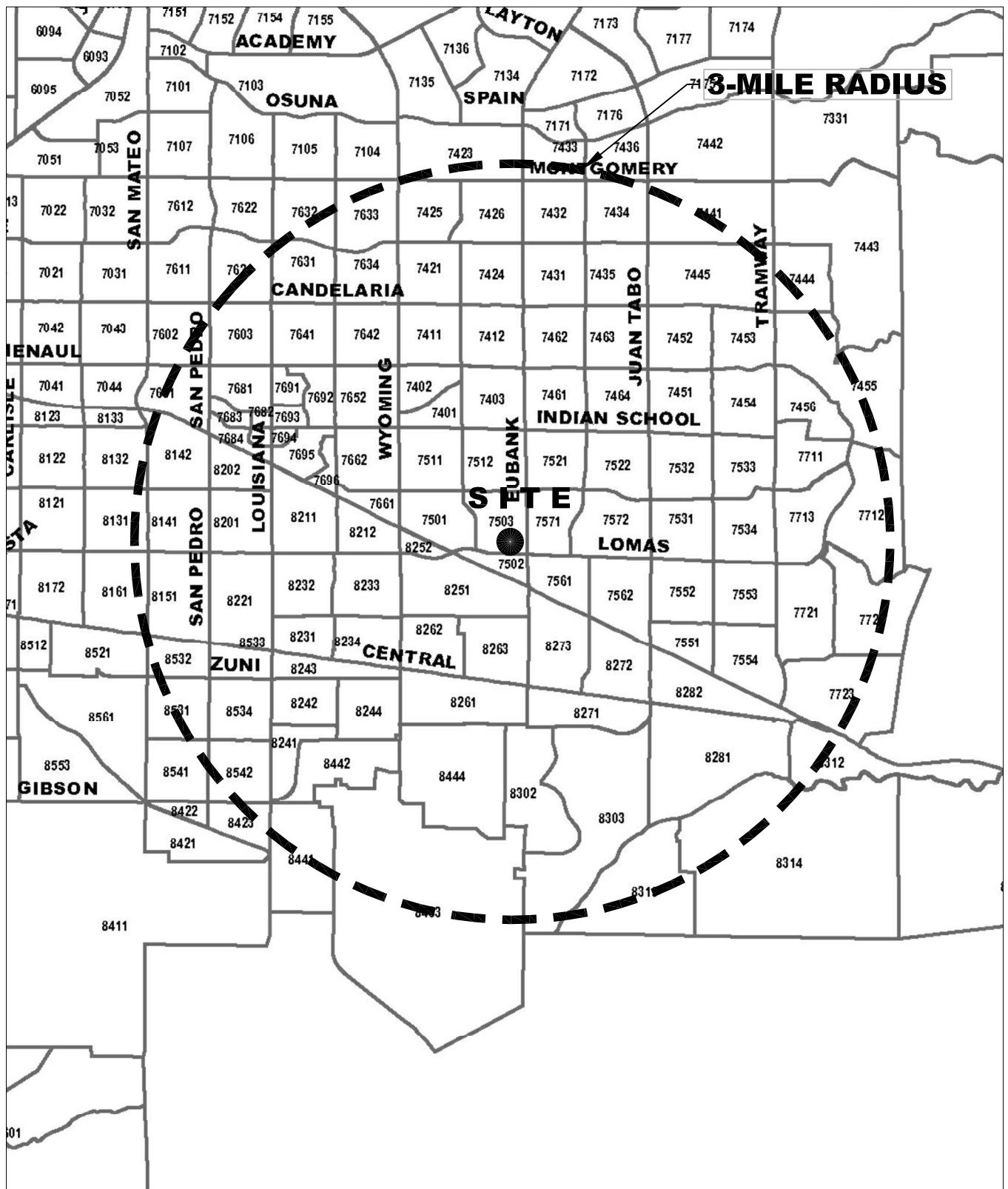
Signalized

Begin Time	End Time	Eastbound (Lomas Blvd.)				Westbound (Lomas Blvd.)				Northbound (Eubank Blvd.)				Southbound (Eubank Blvd.)			
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
7:00 AM	7:15 AM	16	56	7	0	72	97	16	0	15	132	31	0	13	207	58	0
7:15 AM	7:30 AM	28	59	12	0	101	184	23	0	21	188	35	0	21	258	66	0
7:30 AM	7:45 AM	38	56	16	1	91	211	27	0	47	228	45	0	30	315	70	0
7:45 AM	8:00 AM	41	90	18	0	101	231	42	2	59	256	55	0	36	325	84	1
8:00 AM	8:15 AM	32	66	24	0	83	172	18	0	61	204	52	0	32	335	59	0
8:15 AM	8:30 AM	28	59	18	1	73	127	19	1	20	204	42	0	20	279	63	0
8:30 AM	8:45 AM	22	57	14	0	80	109	21	0	19	192	44	0	19	246	46	1
8:45 AM	9:00 AM	38	61	19	0	71	123	22	0	20	200	43	1	26	241	40	0
AM Peak Hour Volumes		139	271	70	1	376	798	110	2	188	876	187	0	119	1233	279	1
% of Total Traffic		3.0%	5.8%	1.5%		8.1%	17.2%	2.4%		4.0%	18.8%	4.0%		2.6%	26.5%	6.0%	
% Directional			10.3%				27.6%				26.9%				35.1%		
AM Peak Hour Factor			0.81				0.86				0.85				0.92		

Begin Time	End Time	Eastbound (Lomas Blvd.)				Westbound (Lomas Blvd.)				Northbound (Eubank Blvd.)				Southbound (Eubank Blvd.)			
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
4:00 PM	4:15 PM	71	117	22	2	106	84	25	3	25	355	62	0	67	290	47	0
4:15 PM	4:30 PM	53	140	36	0	93	97	37	0	31	304	64	0	55	258	46	0
4:30 PM	4:45 PM	64	134	26	0	89	90	37	2	34	316	67	0	59	283	39	0
4:45 PM	5:00 PM	69	194	36	1	93	114	45	0	23	316	62	0	62	244	25	0
5:00 PM	5:15 PM	65	175	43	0	95	97	36	0	27	384	59	0	64	335	49	0
5:15 PM	5:30 PM	59	175	35	0	97	101	42	0	45	338	62	0	69	277	35	0
5:30 PM	5:45 PM	57	147	31	1	99	107	31	0	17	343	53	0	62	270	38	0
5:45 PM	6:00 PM	39	96	36	1	90	85	41	0	25	306	54	0	69	229	36	0
PM Peak Hour Volumes		250	691	145	2	384	419	154	0	112	1381	236	0	257	1126	147	0
% of Total Traffic		4.7%	13.0%	2.7%		7.2%	7.9%	2.9%		2.1%	26.0%	4.5%		4.8%	21.2%	2.8%	
% Directional			20.5%				18.0%				32.6%				28.9%		
PM Peak Hour Factor			0.91				0.95				0.92				0.85		

Lomas Blvd. Car Wash (Lomas Blvd. West of Eubank Blvd.)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME		A. M. PEAK HOUR		P. M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT	
Units						
Automatic Car Wash (Local Data)						
4.50						
1,000 S.F.						
505		25	20	27	17	



DATA ANALYSIS SUBZONE (DASZ) MAP
Car Wash Renovation (Lomas Blvd. / Eubank Blvd.)

Trip Distribution Table

Car Wash Renovation (Lomas Blvd. / Eubank Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial Trips**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico.

DASZ #	% Sub Area in Study						(EN) Eubank Blvd. North			(LE) Lomas Blvd. East		
		2012 Population	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2020								
Boundary Specified on DASZ Map												
7401	100%	743	800	759	759	0.50%	50%	0.25%	380	0%	0.00%	0
7402	100%	1134	1821	1,330	1,330	0.88%	50%	0.44%	665	0%	0.00%	0
7403	100%	1079	1146	1,098	1,098	0.73%	100%	0.73%	1,098	0%	0.00%	0
7411	100%	1475	1610	1,514	1,514	1.00%	50%	0.50%	757	0%	0.00%	0
7412	100%	1395	1614	1,458	1,458	0.97%	100%	0.97%	1,458	0%	0.00%	0
7421	100%	1419	2022	1,591	1,591	1.06%	50%	0.53%	796	0%	0.00%	0
7423	10%	2480	2665	2,533	253	0.17%	50%	0.08%	127	0%	0.00%	0
7424	100%	1274	1257	1,269	1,269	0.84%	50%	0.42%	635	0%	0.00%	0
7425	100%	1126	1386	1,200	1,200	0.80%	50%	0.40%	600	0%	0.00%	0
7426	100%	1223	1174	1,209	1,209	0.80%	50%	0.40%	605	0%	0.00%	0
7431	100%	1512	1582	1,532	1,532	1.02%	50%	0.51%	766	0%	0.00%	0
7432	100%	1341	1361	1,347	1,347	0.89%	50%	0.45%	674	0%	0.00%	0
7433	25%	1717	2291	1,881	470	0.31%	50%	0.16%	235	0%	0.00%	0
7434	95%	1261	1440	1,312	1,246	0.83%	0%	0.00%	0	100%	0.83%	1,246
7435	100%	2084	2944	2,330	2,330	1.55%	0%	0.00%	0	100%	1.55%	2,330
7436	5%	755	1223	889	44	0.03%	0%	0.00%	0	100%	0.03%	44
7441	40%	2708	2934	2,773	1,109	0.74%	0%	0.00%	0	100%	0.74%	1,109
7444	20%	988	1064	1,010	202	0.13%	0%	0.00%	0	100%	0.13%	202
7445	95%	2834	2837	2,835	2,693	1.79%	0%	0.00%	0	100%	1.79%	2,693
7451	100%	1548	1622	1,569	1,569	1.04%	0%	0.00%	0	100%	1.04%	1,569
7452	100%	1464	1481	1,469	1,469	0.97%	0%	0.00%	0	100%	0.97%	1,469
7453	100%	1724	1864	1,764	1,764	1.17%	0%	0.00%	0	100%	1.17%	1,764
7454	100%	1391	1474	1,415	1,415	0.94%	0%	0.00%	0	100%	0.94%	1,415
7455	60%	1254	1600	1,353	812	0.54%	0%	0.00%	0	100%	0.54%	812
7456	100%	846	869	853	853	0.57%	0%	0.00%	0	100%	0.57%	853
7461	100%	2086	2236	2,129	2,129	1.41%	50%	0.71%	1,065	50%	0.71%	1,065
7462	100%	1681	1689	1,683	1,683	1.12%	50%	0.56%	842	50%	0.56%	842
7463	100%	1547	1577	1,556	1,556	1.03%	0%	0.00%	0	100%	1.03%	1,556
7464	100%	1215	1335	1,249	1,249	0.83%	0%	0.00%	0	100%	0.83%	1,249
7501	100%	1367	1493	1,403	1,403	0.93%	0%	0.00%	0	0%	0.00%	0
7503	100%	1139	1142	1,140	1,140	0.76%	50%	0.38%	570	0%	0.00%	0
7502	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0
7511	100%	1281	1256	1,274	1,274	0.85%	50%	0.42%	637	0%	0.00%	0
7512	100%	1354	1371	1,359	1,359	0.90%	50%	0.45%	680	0%	0.00%	0
7521	100%	1207	1350	1,248	1,248	0.83%	50%	0.41%	624	50%	0.41%	624
7522	100%	1622	1520	1,593	1,593	1.06%	0%	0.00%	0	100%	1.06%	1,593
7531	100%	1882	2026	1,923	1,923	1.28%	25%	0.32%	481	75%	0.96%	1,442
7532	100%	1531	1554	1,538	1,538	1.02%	50%	0.51%	769	50%	0.51%	769
7533	100%	1365	1927	1,526	1,526	1.01%	50%	0.51%	763	50%	0.51%	763
7534	100%	2854	3207	2,955	2,955	1.96%	50%	0.98%	1,478	50%	0.98%	1,478
7551	100%	746	755	749	749	0.50%	0%	0.00%	0	50%	0.25%	375
7552	100%	934	1069	973	973	0.65%	0%	0.00%	0	100%	0.65%	973
7553	100%	2228	2153	2,207	2,207	1.46%	0%	0.00%	0	100%	1.46%	2,207
7554	100%	2016	2249	2,083	2,083	1.38%	0%	0.00%	0	50%	0.69%	1,042
7561	100%	152	210	169	169	0.11%	0%	0.00%	0	50%	0.06%	85
7562	100%	1919	1767	1,876	1,876	1.24%	0%	0.00%	0	100%	1.24%	1,876
7571	100%	1215	1209	1,213	1,213	0.80%	50%	0.40%	607	50%	0.40%	607
7572	100%	2045	2012	2,036	2,036	1.35%	25%	0.34%	509	75%	1.01%	1,527
7601	70%	943	915	935	655	0.43%	25%	0.11%	164	0%	0.00%	0
7602	20%	1103	1143	1,114	223	0.15%	50%	0.07%	112	0%	0.00%	0
7603	100%	1243	1484	1,312	1,312	0.87%	25%	0.22%	328	0%	0.00%	0
7621	35%	1223	1271	1,237	433	0.29%	25%	0.07%	108	0%	0.00%	0
7631	100%	1166	1220	1,181	1,181	0.78%	25%	0.20%	295	0%	0.00%	0
7632	30%	989	1107	1,023	307	0.20%	25%	0.05%	77	0%	0.00%	0
7633	100%	1869	2020	1,912	1,912	1.27%	25%	0.32%	478	0%	0.00%	0
7634	100%	688	718	697	697	0.46%	25%	0.12%	174	0%	0.00%	0
7641	100%	1291	1372	1,314	1,314	0.87%	25%	0.22%	329	0%	0.00%	0
7642	100%	841	906	860	860	0.57%	25%	0.14%	215	0%	0.00%	0
7652	100%	1035	1040	1,036	1,036	0.69%	50%	0.34%	518	0%	0.00%	0
7661	100%	298	503	357	357	0.24%	50%	0.12%	179	0%	0.00%	0
7662	100%	1724	1769	1,737	1,737	1.15%	50%	0.58%	869	0%	0.00%	0
7681	100%	0	2510	717	717	0.48%	25%	0.12%	179	0%	0.00%	0

Trip Distribution Table

Car Wash Renovation (Lomas Blvd. / Eubank Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial Trips**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2012 Population	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	(EN) Eubank Blvd. North			(LE) Lomas Blvd. East		
							% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map		2012	2040	2020								
7682	100%	0	300	86	86	0.06%	25%	0.01%	22	0%	0.00%	0
7683	100%	127	349	190	190	0.13%	25%	0.03%	48	0%	0.00%	0
7684	100%	855	1798	1,124	1,124	0.75%	25%	0.19%	281	0%	0.00%	0
7685	100%	0	447	128	128	0.08%	25%	0.02%	32	0%	0.00%	0
7691	100%	277	2619	946	946	0.63%	25%	0.16%	237	0%	0.00%	0
7692	100%	501	789	583	583	0.39%	25%	0.10%	146	0%	0.00%	0
7693	100%	184	500	274	274	0.18%	25%	0.05%	69	0%	0.00%	0
7694	100%	0	946	270	270	0.18%	25%	0.04%	68	0%	0.00%	0
7695	100%	0	4111	1,175	1,175	0.78%	25%	0.19%	294	0%	0.00%	0
7696	100%	798	1373	962	962	0.64%	25%	0.16%	241	0%	0.00%	0
7711	100%	1101	1162	1,118	1,118	0.74%	50%	0.37%	559	50%	0.37%	559
7712	80%	1478	1457	1,472	1,178	0.78%	50%	0.39%	589	50%	0.39%	589
7713	100%	1724	1813	1,749	1,749	1.16%	50%	0.58%	875	50%	0.58%	875
7721	100%	2340	2529	2,394	2,394	1.59%	0%	0.00%	0	50%	0.79%	1,197
7722	60%	1003	1140	1,042	625	0.41%	0%	0.00%	0	50%	0.21%	313
7723	70%	1102	1352	1,173	821	0.54%	0%	0.00%	0	50%	0.27%	411
8131	15%	1229	1397	1,277	192	0.13%	0%	0.00%	0	0%	0.00%	0
8132	5%	1156	1233	1,178	59	0.04%	0%	0.00%	0	0%	0.00%	0
8141	100%	998	1149	1,041	1,041	0.69%	0%	0.00%	0	0%	0.00%	0
8142	95%	1527	1582	1,543	1,466	0.97%	0%	0.00%	0	0%	0.00%	0
8151	100%	1800	2142	1,898	1,898	1.26%	0%	0.00%	0	0%	0.00%	0
8161	10%	1960	2795	2,199	220	0.15%	0%	0.00%	0	0%	0.00%	0
8201	100%	1131	1186	1,147	1,147	0.76%	0%	0.00%	0	0%	0.00%	0
8202	100%	861	873	864	864	0.57%	0%	0.00%	0	0%	0.00%	0
8211	100%	1609	2364	1,825	1,825	1.21%	0%	0.00%	0	0%	0.00%	0
8212	100%	283	407	318	318	0.21%	0%	0.00%	0	0%	0.00%	0
8221	100%	10	42	19	19	0.01%	0%	0.00%	0	0%	0.00%	0
8231	100%	1542	1609	1,561	1,561	1.04%	0%	0.00%	0	0%	0.00%	0
8232	100%	1496	1814	1,587	1,587	1.05%	0%	0.00%	0	0%	0.00%	0
8233	100%	2775	2735	2,764	2,764	1.83%	0%	0.00%	0	0%	0.00%	0
8234	100%	2086	3417	2,466	2,466	1.64%	0%	0.00%	0	0%	0.00%	0
8241	100%	1326	1451	1,362	1,362	0.90%	0%	0.00%	0	0%	0.00%	0
8242	100%	3662	3958	3,747	3,747	2.49%	0%	0.00%	0	0%	0.00%	0
8243	100%	994	2228	1,347	1,347	0.89%	0%	0.00%	0	0%	0.00%	0
8244	100%	2748	4405	3,221	3,221	2.14%	0%	0.00%	0	0%	0.00%	0
8251	100%	378	499	413	413	0.27%	0%	0.00%	0	0%	0.00%	0
8252	100%	0	608	174	174	0.12%	0%	0.00%	0	0%	0.00%	0
8261	100%	1907	2103	1,963	1,963	1.30%	0%	0.00%	0	0%	0.00%	0
8262	100%	2083	2092	2,086	2,086	1.38%	0%	0.00%	0	0%	0.00%	0
8263	100%	1843	1991	1,885	1,885	1.25%	0%	0.00%	0	0%	0.00%	0
8271	100%	1631	1998	1,736	1,736	1.15%	0%	0.00%	0	50%	0.58%	868
8272	100%	1717	1758	1,729	1,729	1.15%	0%	0.00%	0	50%	0.57%	865
8273	100%	1128	1732	1,301	1,301	0.86%	0%	0.00%	0	0%	0.00%	0
8281	20%	5988	6604	6,164	1,233	0.82%	0%	0.00%	0	50%	0.41%	617
8282	100%	1731	3465	2,226	2,226	1.48%	0%	0.00%	0	50%	0.74%	1,113
8302	100%	810	1435	989	989	0.66%	0%	0.00%	0	0%	0.00%	0
8303	95%	3904	4269	4,008	3,808	2.53%	0%	0.00%	0	50%	1.26%	1,904
8312	100%	675	926	747	747	0.50%	0%	0.00%	0	0%	0.00%	0
8314	15%	3758	5083	4,137	621	0.41%	0%	0.00%	0	0%	0.00%	0
8315	55%	1538	4196	2,297	1,263	0.84%	0%	0.00%	0	50%	0.42%	632
8423	20%	366	486	400	80	0.05%	0%	0.00%	0	0%	0.00%	0
8433	45%	534	570	544	245	0.16%	0%	0.00%	0	100%	0.16%	245
8441	50%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0
8442	100%	717	702	713	713	0.47%	0%	0.00%	0	0%	0.00%	0
8444	100%	2311	2425	2,344	2,344	1.56%	0%	0.00%	0	0%	0.00%	0
8531	55%	2014	2283	2,091	1,150	0.76%	0%	0.00%	0	0%	0.00%	0
8532	95%	869	1425	1,028	977	0.65%	0%	0.00%	0	0%	0.00%	0
8533	100%	708	1833	1,029	1,029	0.68%	0%	0.00%	0	0%	0.00%	0
8534	100%	2140	2539	2,254	2,254	1.50%	0%	0.00%	0	0%	0.00%	0
8541	5%	3350	4409	3,653	183	0.12%	0%	0.00%	0	0%	0.00%	0
8542	90%	1848	1855	1,850	1,665	1.10%	0%	0.00%	0	0%	0.00%	0
						181,418	150,700	100.00%	25,296	16.79%		45,761
												30.37%

Trip Distribution Table

Car Wash Renovation (Lomas Blvd. / Eubank Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico.

DASZ #	% Sub Area in Study						(ES) Eubank Blvd. South			(LW) Lomas Blvd. West		
		2012 Population	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2020								
Boundary Specified on DASZ Map												
7401	100%	743	800	759	759	0.50%	0%	0.00%	0	50%	0.25%	380
7402	100%	1134	1821	1,330	1,330	0.88%	0%	0.00%	0	50%	0.44%	665
7403	100%	1079	1146	1,098	1,098	0.73%	0%	0.00%	0	0%	0.00%	0
7411	100%	1475	1610	1,514	1,514	1.00%	0%	0.00%	0	50%	0.50%	757
7412	100%	1395	1614	1,458	1,458	0.97%	0%	0.00%	0	0%	0.00%	0
7421	100%	1419	2022	1,591	1,591	1.06%	0%	0.00%	0	50%	0.53%	796
7423	10%	2480	2665	2,533	253	0.17%	0%	0.00%	0	50%	0.08%	127
7424	100%	1274	1257	1,269	1,269	0.84%	0%	0.00%	0	50%	0.42%	635
7425	100%	1126	1386	1,200	1,200	0.80%	0%	0.00%	0	50%	0.40%	600
7426	100%	1223	1174	1,209	1,209	0.80%	0%	0.00%	0	50%	0.40%	605
7431	100%	1512	1582	1,532	1,532	1.02%	0%	0.00%	0	50%	0.51%	766
7432	100%	1341	1361	1,347	1,347	0.89%	0%	0.00%	0	50%	0.45%	674
7433	25%	1717	2291	1,881	470	0.31%	0%	0.00%	0	50%	0.16%	235
7434	95%	1261	1440	1,312	1,246	0.83%	0%	0.00%	0	0%	0.00%	0
7435	100%	2084	2944	2,330	2,330	1.55%	0%	0.00%	0	0%	0.00%	0
7436	5%	755	1223	889	44	0.03%	0%	0.00%	0	0%	0.00%	0
7441	40%	2708	2934	2,773	1,109	0.74%	0%	0.00%	0	0%	0.00%	0
7444	20%	988	1064	1,010	202	0.13%	0%	0.00%	0	0%	0.00%	0
7445	95%	2834	2837	2,835	2,693	1.79%	0%	0.00%	0	0%	0.00%	0
7451	100%	1548	1622	1,569	1,569	1.04%	0%	0.00%	0	0%	0.00%	0
7452	100%	1464	1481	1,469	1,469	0.97%	0%	0.00%	0	0%	0.00%	0
7453	100%	1724	1864	1,764	1,764	1.17%	0%	0.00%	0	0%	0.00%	0
7454	100%	1391	1474	1,415	1,415	0.94%	0%	0.00%	0	0%	0.00%	0
7455	60%	1254	1600	1,353	812	0.54%	0%	0.00%	0	0%	0.00%	0
7456	100%	846	869	853	853	0.57%	0%	0.00%	0	0%	0.00%	0
7461	100%	2086	2236	2,129	2,129	1.41%	0%	0.00%	0	0%	0.00%	0
7462	100%	1681	1689	1,683	1,683	1.12%	0%	0.00%	0	0%	0.00%	0
7463	100%	1547	1577	1,556	1,556	1.03%	0%	0.00%	0	0%	0.00%	0
7464	100%	1215	1335	1,249	1,249	0.83%	0%	0.00%	0	0%	0.00%	0
7501	100%	1367	1493	1,403	1,403	0.93%	0%	0.00%	0	100%	0.93%	1,403
7503	100%	1139	1142	1,140	1,140	0.76%	0%	0.00%	0	50%	0.38%	570
7502	100%	0	0	0	0	0.00%	50%	0.00%	0	50%	0.00%	0
7511	100%	1281	1256	1,274	1,274	0.85%	0%	0.00%	0	50%	0.42%	637
7512	100%	1354	1371	1,359	1,359	0.90%	0%	0.00%	0	50%	0.45%	680
7521	100%	1207	1350	1,248	1,248	0.83%	0%	0.00%	0	0%	0.00%	0
7522	100%	1622	1520	1,593	1,593	1.06%	0%	0.00%	0	0%	0.00%	0
7531	100%	1882	2026	1,923	1,923	1.28%	0%	0.00%	0	0%	0.00%	0
7532	100%	1531	1554	1,538	1,538	1.02%	0%	0.00%	0	0%	0.00%	0
7533	100%	1365	1927	1,526	1,526	1.01%	0%	0.00%	0	0%	0.00%	0
7534	100%	2854	3207	2,955	2,955	1.96%	0%	0.00%	0	0%	0.00%	0
7551	100%	746	755	749	749	0.50%	50%	0.25%	375	0%	0.00%	0
7552	100%	934	1069	973	973	0.65%	0%	0.00%	0	0%	0.00%	0
7553	100%	2228	2153	2,207	2,207	1.46%	0%	0.00%	0	0%	0.00%	0
7554	100%	2016	2249	2,083	2,083	1.38%	50%	0.69%	1,042	0%	0.00%	0
7561	100%	152	210	169	169	0.11%	50%	0.06%	85	0%	0.00%	0
7562	100%	1919	1767	1,876	1,876	1.24%	0%	0.00%	0	0%	0.00%	0
7571	100%	1215	1209	1,213	1,213	0.80%	0%	0.00%	0	0%	0.00%	0
7572	100%	2045	2012	2,036	2,036	1.35%	0%	0.00%	0	0%	0.00%	0
7601	70%	943	915	935	655	0.43%	25%	0.11%	164	50%	0.22%	328
7602	20%	1103	1143	1,114	223	0.15%	50%	0.07%	112	0%	0.00%	0
7603	100%	1243	1484	1,312	1,312	0.87%	25%	0.22%	328	50%	0.44%	656
7621	35%	1223	1271	1,237	433	0.29%	25%	0.07%	108	50%	0.14%	217
7631	100%	1166	1220	1,181	1,181	0.78%	25%	0.20%	295	50%	0.39%	591
7632	30%	989	1107	1,023	307	0.20%	25%	0.05%	77	50%	0.10%	154
7633	100%	1869	2020	1,912	1,912	1.27%	25%	0.32%	478	50%	0.63%	956
7634	100%	688	718	697	697	0.46%	25%	0.12%	174	50%	0.23%	349
7641	100%	1291	1372	1,314	1,314	0.87%	25%	0.22%	329	50%	0.44%	657
7642	100%	841	906	860	860	0.57%	25%	0.14%	215	50%	0.29%	430
7652	100%	1035	1040	1,036	1,036	0.69%	0%	0.00%	0	50%	0.34%	518
7661	100%	298	503	357	357	0.24%	0%	0.00%	0	50%	0.12%	179
7662	100%	1724	1769	1,737	1,737	1.15%	0%	0.00%	0	50%	0.58%	869
7681	100%	0	2510	717	717	0.48%	25%	0.12%	179	50%	0.24%	359

Trip Distribution Table

Car Wash Renovation (Lomas Blvd. / Eubank Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial** *

2012 and 2040 Data Taken from Mid-Region Council of Governments'

2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2012 Population	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	(ES) Eubank Blvd. South			(LW) Lomas Blvd. West		
							% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map		2012	2040	2020								
7682	100%	0	300	86	86	0.06%	25%	0.01%	22	50%	0.03%	43
7683	100%	127	349	190	190	0.13%	25%	0.03%	48	50%	0.06%	95
7684	100%	855	1798	1,124	1,124	0.75%	25%	0.19%	281	50%	0.37%	562
7685	100%	0	447	128	128	0.08%	25%	0.02%	32	50%	0.04%	64
7691	100%	277	2619	946	946	0.63%	25%	0.16%	237	50%	0.31%	473
7692	100%	501	789	583	583	0.39%	25%	0.10%	146	50%	0.19%	292
7693	100%	184	500	274	274	0.18%	25%	0.05%	69	50%	0.09%	137
7694	100%	0	946	270	270	0.18%	25%	0.04%	68	50%	0.09%	135
7695	100%	0	4111	1,175	1,175	0.78%	25%	0.19%	294	50%	0.39%	588
7696	100%	798	1373	962	962	0.64%	25%	0.16%	241	50%	0.32%	481
7711	100%	1101	1162	1,118	1,118	0.74%	0%	0.00%	0	0%	0.00%	0
7712	80%	1478	1457	1,472	1,178	0.78%	0%	0.00%	0	0%	0.00%	0
7713	100%	1724	1813	1,749	1,749	1.16%	0%	0.00%	0	0%	0.00%	0
7721	100%	2340	2529	2,394	2,394	1.59%	50%	0.79%	1,197	0%	0.00%	0
7722	60%	1003	1140	1,042	625	0.41%	50%	0.21%	313	0%	0.00%	0
7723	70%	1102	1352	1,173	821	0.54%	50%	0.27%	411	0%	0.00%	0
8131	15%	1229	1397	1,277	192	0.13%	50%	0.06%	96	50%	0.06%	96
8132	5%	1156	1233	1,178	59	0.04%	50%	0.02%	30	50%	0.02%	30
8141	100%	998	1149	1,041	1,041	0.69%	50%	0.35%	521	50%	0.35%	521
8142	95%	1527	1582	1,543	1,466	0.97%	50%	0.49%	733	50%	0.49%	733
8151	100%	1800	2142	1,898	1,898	1.26%	0%	0.00%	0	100%	1.26%	1,898
8161	10%	1960	2795	2,199	220	0.15%	0%	0.00%	0	100%	0.15%	220
8201	100%	1131	1186	1,147	1,147	0.76%	0%	0.00%	0	100%	0.76%	1,147
8202	100%	861	873	864	864	0.57%	25%	0.14%	216	75%	0.43%	648
8211	100%	1609	2364	1,825	1,825	1.21%	25%	0.30%	456	75%	0.91%	1,369
8212	100%	283	407	318	318	0.21%	0%	0.00%	0	100%	0.21%	318
8221	100%	10	42	19	19	0.01%	25%	0.00%	5	75%	0.01%	14
8231	100%	1542	1609	1,561	1,561	1.04%	25%	0.26%	390	75%	0.78%	1,171
8232	100%	1496	1814	1,587	1,587	1.05%	25%	0.26%	397	75%	0.79%	1,190
8233	100%	2775	2735	2,764	2,764	1.83%	25%	0.46%	691	75%	1.38%	2,073
8234	100%	2086	3417	2,466	2,466	1.64%	25%	0.41%	617	75%	1.23%	1,850
8241	100%	1326	1451	1,362	1,362	0.90%	75%	0.68%	1,022	25%	0.23%	341
8242	100%	3662	3958	3,747	3,747	2.49%	75%	1.86%	2,810	25%	0.62%	937
8243	100%	994	2228	1,347	1,347	0.89%	75%	0.67%	1,010	25%	0.22%	337
8244	100%	2748	4405	3,221	3,221	2.14%	75%	1.60%	2,416	25%	0.53%	805
8251	100%	378	499	413	413	0.27%	50%	0.14%	207	50%	0.14%	207
8252	100%	0	608	174	174	0.12%	0%	0.00%	0	100%	0.12%	174
8261	100%	1907	2103	1,963	1,963	1.30%	100%	1.30%	1,963	0%	0.00%	0
8262	100%	2083	2092	2,086	2,086	1.38%	50%	0.69%	1,043	50%	0.69%	1,043
8263	100%	1843	1991	1,885	1,885	1.25%	100%	1.25%	1,885	0%	0.00%	0
8271	100%	1631	1998	1,736	1,736	1.15%	50%	0.58%	868	0%	0.00%	0
8272	100%	1717	1758	1,729	1,729	1.15%	50%	0.57%	865	0%	0.00%	0
8273	100%	1128	1732	1,301	1,301	0.86%	100%	0.86%	1,301	0%	0.00%	0
8281	20%	5988	6604	6,164	1,233	0.82%	50%	0.41%	617	0%	0.00%	0
8282	100%	1731	3465	2,226	2,226	1.48%	50%	0.74%	1,113	0%	0.00%	0
8302	100%	810	1435	989	989	0.66%	100%	0.66%	989	0%	0.00%	0
8303	95%	3904	4269	4,008	3,808	2.53%	50%	1.26%	1,904	0%	0.00%	0
8312	100%	675	926	747	747	0.50%	100%	0.50%	747	0%	0.00%	0
8314	15%	3758	5083	4,137	621	0.41%	100%	0.41%	621	0%	0.00%	0
8315	55%	1538	4196	2,297	1,263	0.84%	50%	0.42%	632	0%	0.00%	0
8423	20%	366	486	400	80	0.05%	50%	0.03%	40	50%	0.03%	40
8433	45%	534	570	544	245	0.16%	0%	0.00%	0	0%	0.00%	0
8441	50%	0	0	0	0	0.00%	50%	0.00%	0	50%	0.00%	0
8442	100%	717	702	713	713	0.47%	50%	0.24%	357	50%	0.24%	357
8444	100%	2311	2425	2,344	2,344	1.56%	100%	1.56%	2,344	0%	0.00%	0
8531	55%	2014	2283	2,091	1,150	0.76%	50%	0.38%	575	50%	0.38%	575
8532	95%	869	1425	1,028	977	0.65%	50%	0.32%	489	50%	0.32%	489
8533	100%	708	1833	1,029	1,029	0.68%	50%	0.34%	515	50%	0.34%	515
8534	100%	2140	2539	2,254	2,254	1.50%	50%	0.75%	1,127	50%	0.75%	1,127
8541	5%	3350	4409	3,653	183	0.12%	50%	0.06%	92	50%	0.06%	92
8542	90%	1848	1855	1,850	1,665	1.10%	50%	0.55%	833	50%	0.55%	833
						181,418	150,700	100.00%	39,844	26.44%	39,799	26.41%

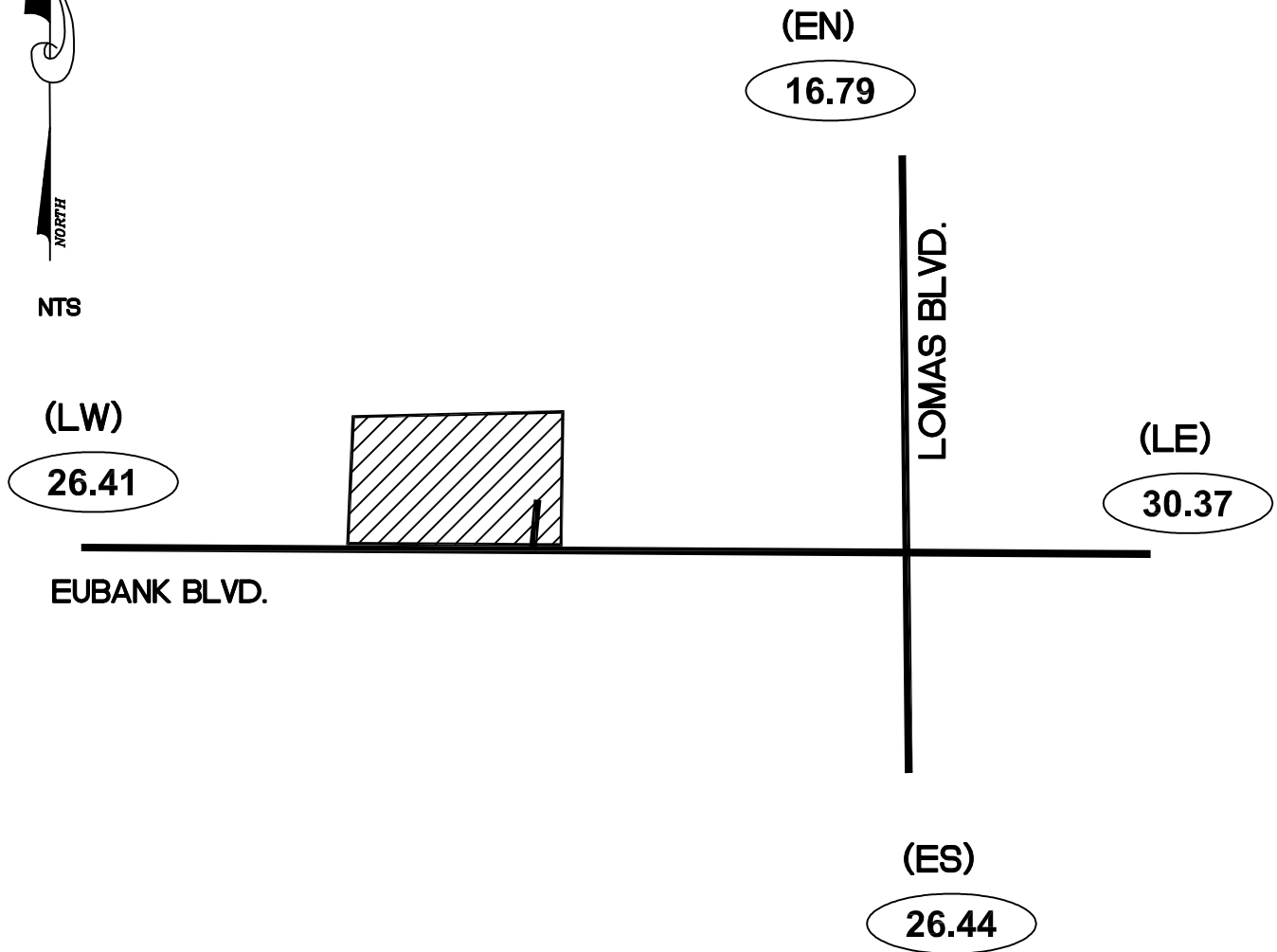
Car Wash Renovation

(Lomas Blvd. / Eubank Blvd.)

Trip Distribution Map (%)



NTS



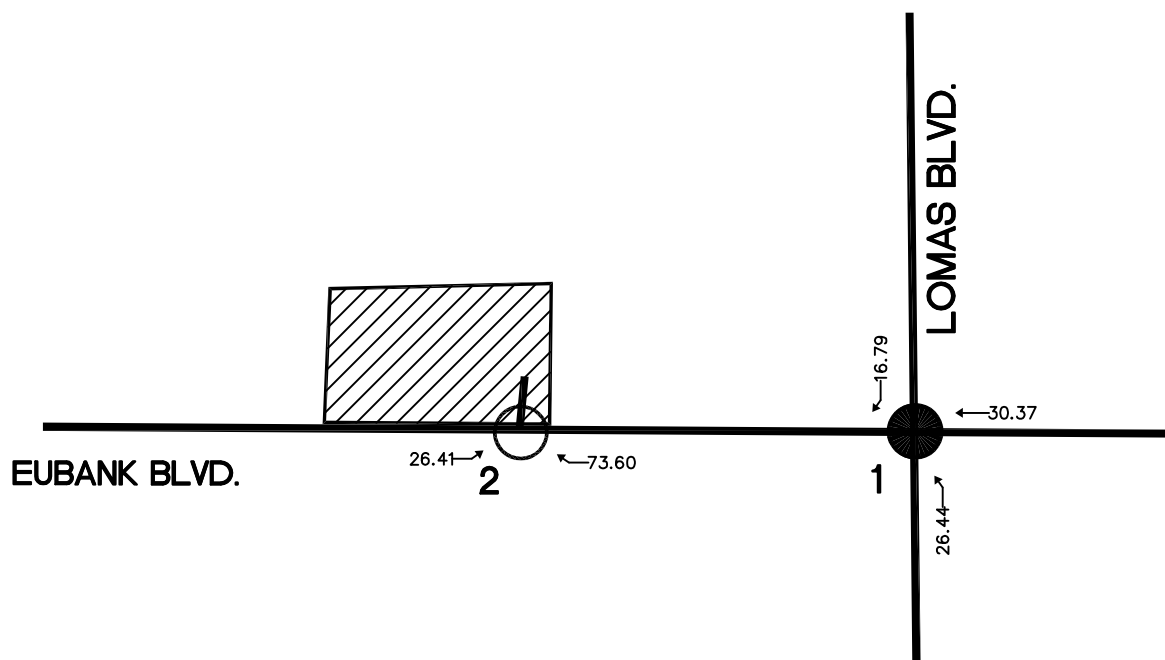
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Car Wash Renovation

(Lomas Blvd. / Eubank Blvd.)

Trip Assignments (% Entering)



SIGNALIZED INTERSECTION



UNSIGNALIZED INTERSECTION

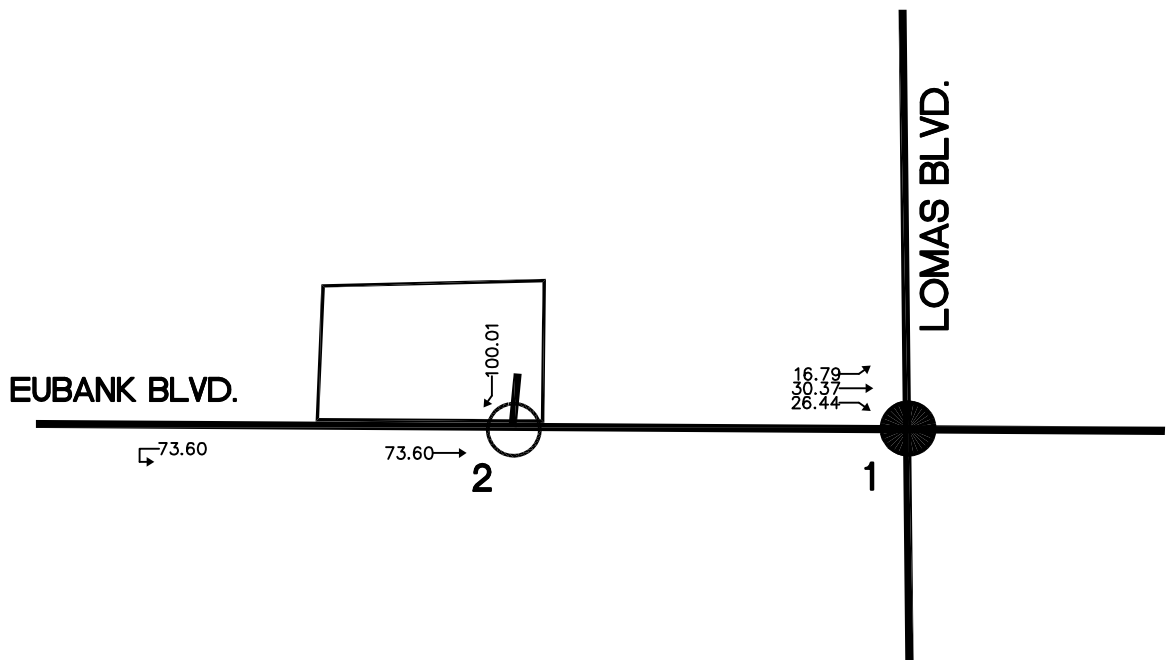
Terry O. Brown, P.E.
P.O. Box 92051
Albuquerque, NM 87199-2051
(505)883-8807 (Voice)
(505)212-0267 (Fax)



Car Wash Renovation

(Lomas Blvd. / Eubank Blvd.)

Trip Assignments (% Exiting)



SIGNALIZED INTERSECTION



UNSIGNALIZED INTERSECTION

Terry O. Brown, P.E.
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Car Wash Renovation (Lomas Blvd. / Eubank Blvd.)

Projected Turning Movements SUMMARY
PROPOSED DEVELOPMENT (2020) - 100% Development

INTERSECTION:

Summary

Lomas Blvd. / Eubank Blvd.

(1)

3.0% Truck

Existing (2019)**2020 (NO BUILD - A.M.)****2020 (BUILD - A.M.)**

0.87			0.87			0.87			0.87			PHF
Eastbound (Lomas Blvd.)			Westbound (Lomas Blvd.)			Northbound (Eubank Blvd.)			Southbound (Eubank Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
140	272	70	378	802	111	189	880	188	120	1,239	280	
140	274	71	380	806	111	190	885	189	120	1,245	282	
143	280	76	380	812	111	195	885	189	120	1,245	285	

Existing (2019)**2020 (NO BUILD - P.M.)****2020 (BUILD - P.M.)**

0.93			0.93			0.93			0.93			PHF
Eastbound (Lomas Blvd.)			Westbound (Lomas Blvd.)			Northbound (Eubank Blvd.)			Southbound (Eubank Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
251	694	146	386	421	155	113	1,388	237	258	1,132	148	
253	698	146	388	423	156	113	1,395	238	260	1,137	148	
256	703	150	388	429	156	118	1,395	238	260	1,137	151	

Lomas Blvd. / E. Driveway

(2)

3.0% Truck

Existing (2019)**2020 (NO BUILD - A.M.)****2020 (BUILD - A.M.)**

0.87			0.87			0.87			0.87			PHF
Eastbound (Lomas Blvd.)			Westbound (Lomas Blvd.)			Northbound (E. Driveway)			Southbound (E. Driveway)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	414	0	0	1,278	0	0	0	0	0	0	0	0
15	429	0	0	1,278	5	0	0	0	0	0	0	20

Existing (2019)**2020 (NO BUILD - P.M.)****2020 (BUILD - P.M.)**

0.93			0.93			0.93			0.93			PHF
Eastbound (Lomas Blvd.)			Westbound (Lomas Blvd.)			Northbound (E. Driveway)			Southbound (E. Driveway)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	1,097	0	0	684	0	0	0	0	0	0	0	0
15	1,108	0	0	684	5	0	0	0	0	0	0	15

Car Wash Renovation (Lomas Blvd. / Eubank Blvd.)

Projected Turning Movements Worksheet

Lomas Blvd. / Eubank Blvd.

INTERSECTION :

E-W Street: **Lomas Blvd.** (1)
N-S Street: **Eubank Blvd.**

Year of Existing Counts 2018
Implementation Year 2020

Growth Rates

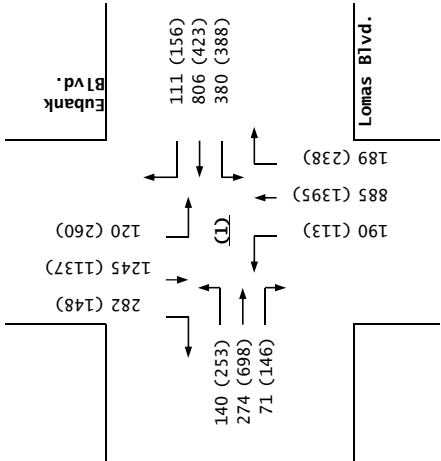
	0.50%			0.50%			0.50%			0.50%		
	Eastbound (Lomas Blvd.)			Westbound (Lomas Blvd.)			Northbound (Eubank Blvd.)			Southbound (Eubank Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	139	271	70	376	798	110	188	876	187	119	1,233	279
Background Traffic Growth	1	3	1	4	8	1	2	9	2	1	12	3
Subtotal (NO BUILD - A.M.)	140	274	71	380	806	111	190	885	189	120	1,245	282
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	30.37%	0.00%	26.44%	0.00%	0.00%	0.00%	0.00%	16.79%
Percent Commercial Trips Generated(Exiting)	16.79%	30.37%	26.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	3	6	5	0	6	0	5	0	0	0	0	3
Total AM Peak Hour BUILD Volumes	143	280	76	380	812	111	195	885	189	120	1,245	285

	0.50%			0.50%			0.50%			0.50%		
	Eastbound (Lomas Blvd.)			Westbound (Lomas Blvd.)			Northbound (Eubank Blvd.)			Southbound (Eubank Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	250	691	145	384	419	154	112	1,381	236	257	1,126	147
Background Traffic Growth	3	7	1	4	4	2	1	14	2	3	11	1
Subtotal (NO BUILD - P.M.)	253	698	146	388	423	156	113	1,395	238	260	1,137	148
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	30.37%	0.00%	26.44%	0.00%	0.00%	0.00%	0.00%	16.79%
Percent Commercial Trips Generated(Exiting)	16.79%	30.37%	26.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	3	5	4	0	6	0	5	0	0	0	0	3
Total PM Peak Hour BUILD Volumes	256	703	150	388	429	156	118	1,395	238	260	1,137	151

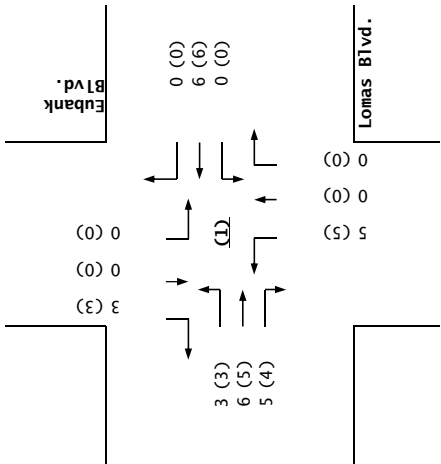
Number of Commercial Trips Generated

Entering	Exiting		
20	20	A.M.	100% Commercial Development
20	15	P.M.	

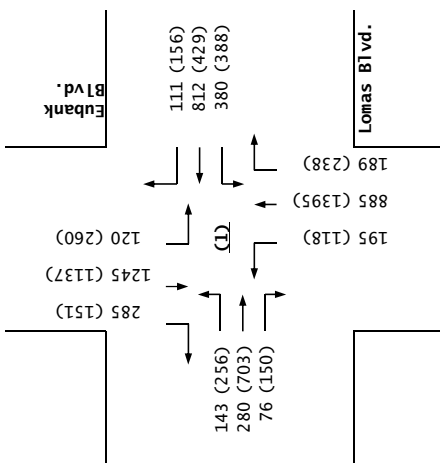
2020
NO BUILD



Trips



2020
BUILD



Lomas Blvd. / Eubank Blvd.

Car Wash Renovation (Lomas Blvd. / Eubank Blvd.)

Projected Turning Movements Worksheet

Lomas Blvd. / E. Driveway

INTERSECTION :

 E-W Street: **Lomas Blvd.**

(2)

 N-S Street: **E. Driveway**

Year of Existing Counts

2018

Implementation Year

2020

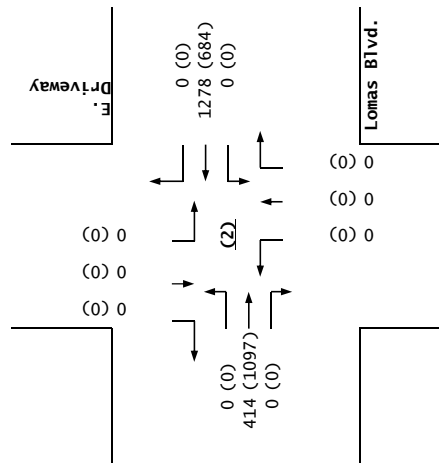
Growth Rates

	0.00%			0.00%			0.00%			0.00%		
	Eastbound (Lomas Blvd.)			Westbound (Lomas Blvd.)			Northbound (E. Driveway)			Southbound (E. Driveway)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	414	0	0	1,278	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	73.60%	0.00%	0.00%	0.00%	0.00%	26.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	73.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.01%
Total Trips Generated	15	15	0	0	0	5	0	0	0	0	0	20
Total AM Peak Hour BUILD Volumes	15	429	0	0	1,278	5	0	0	0	0	0	20

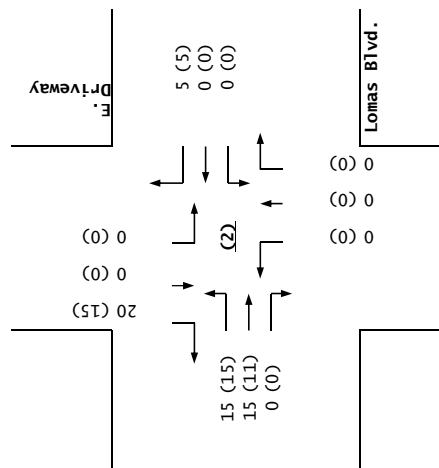
	0.00%			0.00%			0.00%			0.00%		
	Eastbound (Lomas Blvd.)			Westbound (Lomas Blvd.)			Northbound (E. Driveway)			Southbound (E. Driveway)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	1,097	0	0	684	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	73.60%	0.00%	0.00%	0.00%	0.00%	26.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	73.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.01%
Total Trips Generated	15	11	0	0	0	5	0	0	0	0	0	15
Total PM Peak Hour BUILD Volumes	15	1,108	0	0	684	5	0	0	0	0	0	15

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	20	20		
	20	15	P.M.	

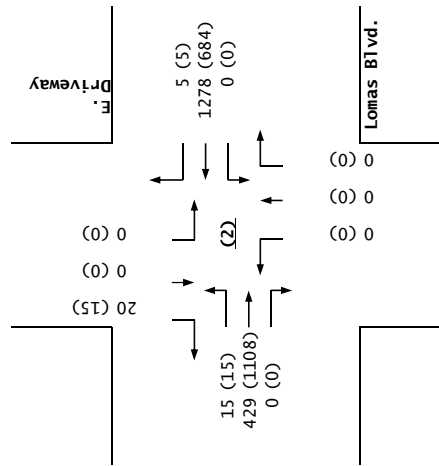
2020
NO BUILD



Trips



2020
BUILD



Lomas Blvd. / E. Driveway

Timings
1: Eubank Blvd. & Lomas Blvd.

Terry O. Brown, PE
01/13/2019

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	 	  	 	  	 	  	 	 	  
Traffic Volume (vph)	143	280	380	812	195	885	189	120	1245
Future Volume (vph)	143	280	380	812	195	885	189	120	1245
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	3	8	5	2	3	1	6
Permitted Phases							2		
Detector Phase	7	4	3	8	5	2	3	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	10.0	21.0
Total Split (s)	13.0	23.0	31.0	41.0	14.0	41.0	31.0	15.0	42.0
Total Split (%)	11.8%	20.9%	28.2%	37.3%	12.7%	37.3%	28.2%	13.6%	38.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	C-Max	Min	Min	C-Max
Act Effct Green (s)	7.9	19.9	19.7	31.7	10.6	41.1	65.8	9.3	39.8
Actuated g/C Ratio	0.07	0.18	0.18	0.29	0.10	0.37	0.60	0.08	0.36
v/c Ratio	0.67	0.44	0.72	0.74	0.69	0.54	0.22	0.48	0.98
Control Delay	63.7	36.4	49.2	37.7	59.9	29.2	6.0	53.6	50.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.7	36.4	49.2	37.7	59.9	29.2	6.0	53.6	50.8
LOS	E	D	D	D	E	C	A	D	D
Approach Delay		44.2		41.0		30.5			51.0
Approach LOS		D		D		C			D

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 10 (9%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 42.0

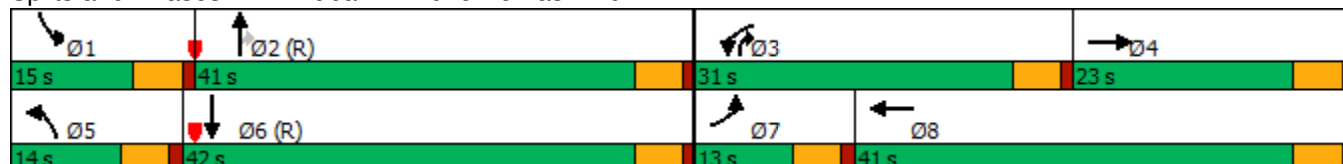
Intersection LOS: D

Intersection Capacity Utilization 75.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Eubank Blvd. & Lomas Blvd.



HCM 6th Signalized Intersection Summary
1: Eubank Blvd. & Lomas Blvd.

Terry O. Brown, PE
01/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	280	76	380	812	111	195	885	189	120	1245	285
Future Volume (veh/h)	143	280	76	380	812	111	195	885	189	120	1245	285
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	164	322	87	437	933	128	224	1017	217	138	1431	328
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	225	707	183	524	1188	162	280	2179	917	202	1678	383
Arrive On Green	0.07	0.18	0.18	0.15	0.26	0.26	0.08	0.43	0.43	0.06	0.41	0.41
Sat Flow, veh/h	3428	4010	1036	3428	4506	616	3428	5066	1572	3428	4121	942
Grp Volume(v), veh/h	164	269	140	437	699	362	224	1017	217	138	1172	587
Grp Sat Flow(s),veh/h/ln	1714	1689	1669	1714	1689	1745	1714	1689	1572	1714	1689	1686
Q Serve(g_s), s	5.2	7.8	8.3	13.6	21.1	21.2	7.1	15.7	7.3	4.3	34.7	34.9
Cycle Q Clear(g_c), s	5.2	7.8	8.3	13.6	21.1	21.2	7.1	15.7	7.3	4.3	34.7	34.9
Prop In Lane	1.00		0.62	1.00		0.35	1.00		1.00	1.00		0.56
Lane Grp Cap(c), veh/h	225	596	294	524	891	460	280	2179	917	202	1375	686
V/C Ratio(X)	0.73	0.45	0.48	0.83	0.78	0.79	0.80	0.47	0.24	0.68	0.85	0.86
Avail Cap(c_a), veh/h	249	596	294	810	1105	571	280	2179	917	312	1375	686
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	40.5	40.7	45.2	37.6	37.6	49.6	22.3	11.1	50.8	29.6	29.7
Incr Delay (d2), s/veh	9.3	0.5	1.2	4.5	3.0	5.8	14.9	0.7	0.6	4.1	6.8	12.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.5	5.9	6.3	10.1	13.9	14.8	6.5	10.4	4.7	3.6	21.3	22.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.8	41.1	41.9	49.7	40.6	43.5	64.6	23.1	11.7	54.8	36.5	42.6
LnGrp LOS	E	D	D	D	D	D	E	C	B	D	D	D
Approach Vol, veh/h	573			1498			1458			1897		
Approach Delay, s/veh	46.6			44.0			27.7			39.7		
Approach LOS	D			D			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.5	52.3	21.8	24.4	14.0	49.8	12.2	34.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax),s	30.0	36.0	26.0	18.0	9.0	37.0	8.0	36.0				
Max Q Clear Time (g_c+l1),s	6.8	17.7	15.6	10.3	9.1	36.9	7.2	23.2				
Green Ext Time (p_c), s	0.1	7.8	1.2	1.5	0.0	0.1	0.0	5.8				
Intersection Summary												
HCM 6th Ctrl Delay	38.4											
HCM 6th LOS	D											

Timings
1: Eubank Blvd. & Lomas Blvd.

Terry O. Brown, PE
01/13/2019

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	 	  	 	  	 	  	 	  	  
Traffic Volume (vph)	256	703	388	429	118	1395	238	260	1137
Future Volume (vph)	256	703	388	429	118	1395	238	260	1137
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	7	4	3	8	5	2	3	1	6
Permitted Phases							2		
Detector Phase	7	4	3	8	5	2	3	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	10.0	21.0
Total Split (s)	22.0	35.0	24.0	37.0	14.0	47.0	24.0	14.0	47.0
Total Split (%)	18.3%	29.2%	20.0%	30.8%	11.7%	39.2%	20.0%	11.7%	39.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	C-Min	Min	Min	C-Min
Act Effct Green (s)	14.5	28.1	18.0	31.6	8.6	42.2	65.2	11.7	45.3
Actuated g/C Ratio	0.12	0.23	0.15	0.26	0.07	0.35	0.54	0.10	0.38
v/c Ratio	0.67	0.78	0.82	0.47	0.52	0.85	0.29	0.84	0.74
Control Delay	58.5	46.3	63.0	33.7	61.7	41.6	11.7	76.5	35.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	46.3	63.0	33.7	61.7	41.6	11.7	76.5	35.2
LOS	E	D	E	C	E	D	B	E	D
Approach Delay		49.1		45.4		38.9			42.2
Approach LOS		D		D		D			D

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 11 (9%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 43.1

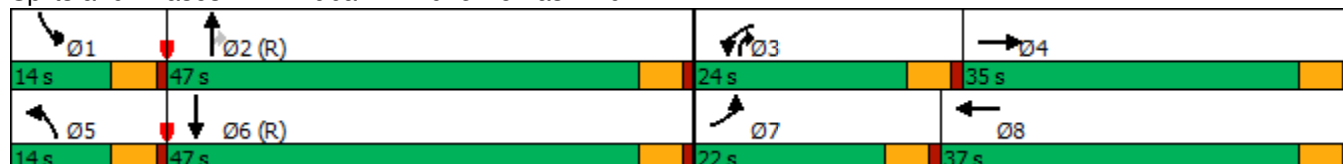
Intersection LOS: D

Intersection Capacity Utilization 79.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Eubank Blvd. & Lomas Blvd.



HCM 6th Signalized Intersection Summary
1: Eubank Blvd. & Lomas Blvd.

Terry O. Brown, PE
01/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	  		 	  		  	  	
Traffic Volume (veh/h)	256	703	150	388	429	156	118	1395	238	260	1137	151
Future Volume (veh/h)	256	703	150	388	429	156	118	1395	238	260	1137	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	275	756	161	417	461	168	127	1500	256	280	1223	162
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	340	917	193	478	960	337	184	2026	848	257	1906	252
Arrive On Green	0.10	0.22	0.22	0.14	0.26	0.26	0.05	0.40	0.40	0.08	0.42	0.42
Sat Flow, veh/h	3428	4190	884	3428	3701	1298	3428	5066	1572	3428	4525	599
Grp Volume(v), veh/h	275	608	309	417	419	210	127	1500	256	280	913	472
Grp Sat Flow(s),veh/h/ln	1714	1689	1696	1714	1689	1622	1714	1689	1572	1714	1689	1748
Q Serve(g_s), s	9.4	20.6	20.9	14.3	12.6	13.2	4.4	30.3	10.7	9.0	25.7	25.7
Cycle Q Clear(g_c), s	9.4	20.6	20.9	14.3	12.6	13.2	4.4	30.3	10.7	9.0	25.7	25.7
Prop In Lane	1.00		0.52	1.00		0.80	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	340	739	371	478	876	421	184	2026	848	257	1422	736
V/C Ratio(X)	0.81	0.82	0.83	0.87	0.48	0.50	0.69	0.74	0.30	1.09	0.64	0.64
Avail Cap(c_a), veh/h	486	844	424	543	901	432	257	2026	848	257	1422	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9	44.6	44.8	50.6	37.6	37.8	55.8	30.7	15.2	55.5	27.6	27.6
Incr Delay (d2), s/veh	6.7	5.9	11.9	13.2	0.4	0.9	4.5	2.5	0.9	81.9	2.2	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.8	14.2	15.2	11.3	9.0	9.2	3.6	18.5	7.2	11.4	16.1	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.6	50.5	56.7	63.8	38.0	38.7	60.3	33.2	16.1	137.4	29.8	31.8
LnGrp LOS	E	D	E	E	D	D	E	C	B	F	C	C
Approach Vol, veh/h	1192				1046				1883			
Approach Delay, s/veh	54.2				48.4				32.7			
Approach LOS	D				D				C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	53.0	21.7	31.3	11.4	55.5	16.9	36.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	30.0	42.0	19.0	30.0	9.0	42.0	17.0	32.0				
Max Q Clear Time (g_c+I1), s	11.0	32.3	16.3	22.9	6.4	27.7	11.4	15.2				
Green Ext Time (p_c), s	0.0	7.1	0.4	3.4	0.1	8.1	0.5	3.8				
Intersection Summary												
HCM 6th Ctrl Delay	44.5											
HCM 6th LOS	D											

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	429	1278	15	0	20
Future Vol, veh/h	5	429	1278	15	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	250	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	493	1469	17	0	23

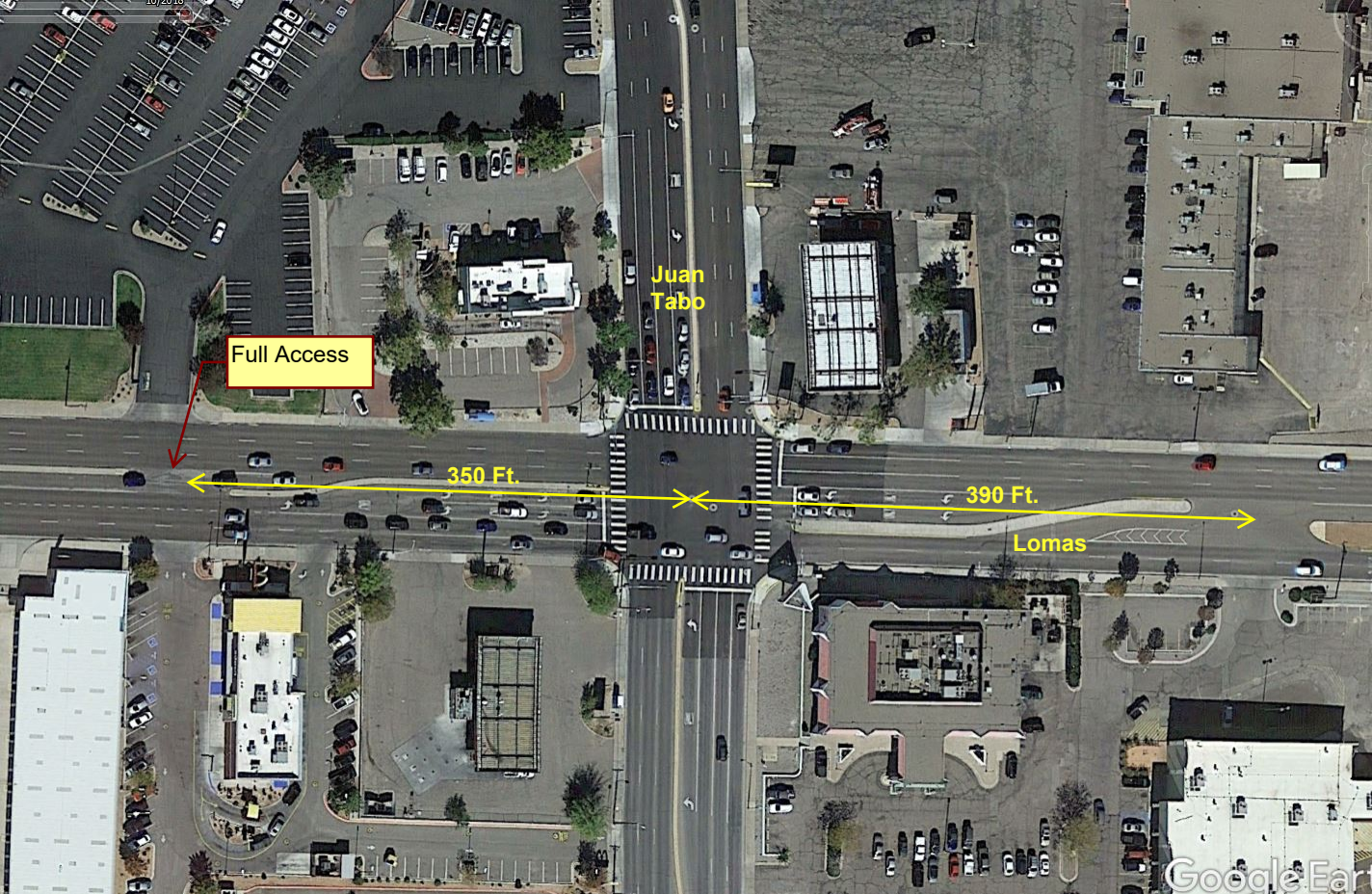
Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1486	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	5.36	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	3.13	-	-
Pot Cap-1 Maneuver	224	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	224	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	17.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	224	-	-	-	309
HCM Lane V/C Ratio	0.026	-	-	-	0.074
HCM Control Delay (s)	21.5	-	-	-	17.6
HCM Lane LOS	C	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	1108	684	5	0	15
Future Vol, veh/h	15	1108	684	5	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	250	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	16	1191	735	5	0	16
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	740	0	-	0	-	368
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.36	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.13	-	-	-	-	3.93
Pot Cap-1 Maneuver	518	-	-	-	0	535
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	518	-	-	-	-	535
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		SB	
HCM Control Delay, s	0.2		0		11.9	
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	518	-	-	-	535	
HCM Lane V/C Ratio	0.031	-	-	-	0.03	
HCM Control Delay (s)	12.2	-	-	-	11.9	
HCM Lane LOS	B	-	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	





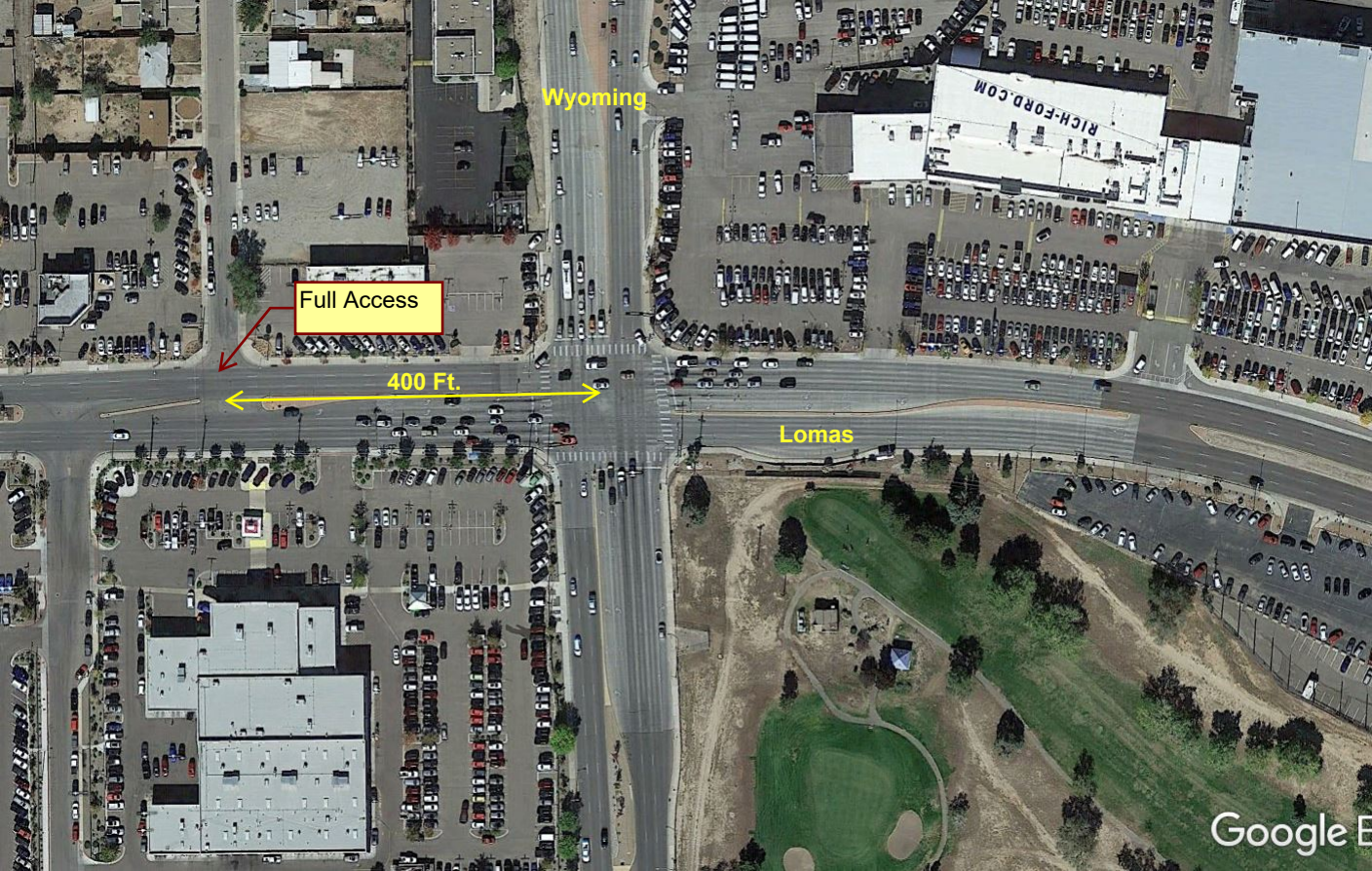
Full Access

Juan Tabo

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