

# **APPENDIX E.1: Traffic Impact Analysis**

## **Areas C and D**

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CARLSBAD  
CLOVIS  
IRVINE  
LOS ANGELES  
PALM SPRINGS  
POINT RICHMOND  
RIVERSIDE  
ROSEVILLE  
SAN LUIS OBISPO

October 26, 2022

Maria Korkosz  
Quarterra  
25 Enterprise  
Aliso Viejo, CA 92656

Subject: Traffic Impact Analysis for A-Town Development Areas C and D (DEV2022-00046)

Dear Ms. Korkosz:

LSA prepared a traffic analysis in June 2015 for the A-Town Master Plan that was included in Addendum No. 4 to Subsequent Environmental Impact Report 339 (SEIR 339), which was certified by the City of Anaheim (City). That traffic analysis examined the potential impacts of buildout of all eight development areas within the A-Town site with a total of 1,746 dwelling units and 50,000 square feet (sf) of retail development. Due to extensive roadway construction in the Platinum Triangle at the time of the 2015 traffic analysis, historic traffic data (from 2013) were used and 2015 existing conditions were estimated. Future traffic conditions in 2023 were calculated by interpolating 10 years of growth between 2013 and General Plan Buildout conditions forecast by the Anaheim Transportation Analysis Model (ATAM). The impacts to 15 intersections and 5 roadway segments in the vicinity of A-Town were analyzed, and the proposed development of the Master Plan was found to have a less than significant impact on all of the facilities except for the intersection of Lewis Street/Katella Avenue. While the development of the Master Plan was not found to have a direct project impact, cumulative traffic conditions were anticipated to cause the intersection to operate at an unsatisfactory level of service (LOS) by the anticipated buildout year (i.e., 2023). Therefore, the traffic analysis concluded that one of the planned roadway improvements included in the Platinum Triangle Improvement Plan (i.e., the addition of a fourth westbound through lane) would need to be implemented prior to occupancy of Development Areas B or C. Development Area C is currently being considered.

In July 2021, LSA prepared a traffic analysis for A-Town Development Area B to confirm whether the proposed improvement identified in the A-Town Master Plan traffic analysis would be required prior to occupancy of that phase. Due to the alterations of traffic patterns caused by the ongoing COVID-19 pandemic (including limited capacity at large traffic generators such as the Anaheim Resort and Angel Stadium), the study did not acquire new traffic volumes. The Development Area B traffic analysis used pre-pandemic traffic volume data from 2019 and applied two methodologies for estimating 2023 opening year traffic volume. The first methodology added a 4 percent growth factor and traffic volume from cumulative projects expected to be open by 2023. The second methodology interpolated between 2019 traffic volume data and General Plan Buildout traffic volume data forecast by ATAM. Both methodologies projected that the intersection of Lewis Street/Katella Avenue would operate at unsatisfactory LOS without or with the project during the afternoon peak hour. An interim improvement was identified in this traffic study that would return the intersection to a satisfactory LOS. The interim improvement was the conversion of the southbound through lane to a through/right-turn lane.

LSA prepared a preliminary transportation analysis for Development Area C and Development Area D in September 2022. That analysis concluded that the trip generation of Development Area C would exceed 100 peak-hour trips and a traffic analysis, equivalent to what was previously prepared for Development Area B, would be required in compliance with SEIR 339 Mitigation Measure 9-6.

Subsequent to preparation of the July 2021 traffic study for Development Area B, pandemic emergency orders have been lifted, capacity restrictions have been discontinued, and travel patterns (particularly commute-period freeway congestion) have returned. Conditions experienced in Fall 2022 are likely to represent a new normal. As such, this analysis of the traffic impacts of A-Town Development Area C collected a new baseline condition traffic volume at Lewis Street/Katella Avenue. Because Development Area C and Development Area D are proposed to be constructed in a single phase, the combined traffic volume of both Development Areas C and D is analyzed.

### Existing Conditions

Existing traffic conditions in Fall 2022 include schools that have reopened and full operation of the area's largest employer. While work-from-home conditions may result in lower traffic volumes than pre-pandemic conditions, this is likely to represent the new normal. LSA contracted with an independent data collection company to collect intersection turn-volume data at Lewis Street/Katella Avenue during the morning and afternoon peak commute periods. These data were collected on Wednesday, September 14, 2022. Attachment A provides the data collection worksheet. LOS worksheets for existing conditions are provided in Attachment B.

Overall traffic volumes in the a.m. peak period were 9 percent lower in 2022 compared to 2019. In the p.m. peak period, 2022 traffic volumes were 2 percent lower than 2019. Some critical movement volumes showed larger reductions. Northbound and eastbound through volumes were less in 2022 than 2019 by more than 10 percent in both morning and afternoon peak hours. Southbound right-turn volumes were less in 2022 than 2019 by more than 30 percent in both morning and afternoon peak hours. The exception was the westbound volumes, which were higher in 2022 than in 2019.

### Traffic Volume Development

As stated above, the updated existing traffic volume data serve as the basis for this re-analysis of traffic impacts. LSA increased these traffic volumes by 1 percent per year to account for ambient traffic growth through 2024. In addition to ambient traffic growth, several approved and pending projects in the vicinity of the project site are anticipated to add traffic volume to the roadway segments. Table A lists projects anticipated to be completed by 2024. Some of these projects prepared a Traffic Impact Analysis that could be used to identify trip assignment at Lewis Street/Katella Avenue. LSA manually assigned trips for the remainder of the cumulative projects.

A-Town Development Area A (the Core Apartments) were occupied at the time of the existing traffic volume collection. Development Areas G and H were under construction, and Development Areas B, E, and F had been entitled with anticipated opening in 2023. LSA used the A-Town Master Plan Traffic network to identify traffic volume for Development Areas B, E, F, G, and H. The total of the existing traffic volume data, 2 percent ambient growth rate, cumulative project traffic volume, and other A-Town development area traffic volumes is the Opening Year (2024) No Project condition. Attachment C provides the Opening Year (2024) No Project LOS worksheets.

**Table A: Cumulative Projects and Trip Generation**

Land Use (Land Use Code)	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
<b>Trip Rates<sup>1</sup></b>									
Industrial Park (130)		TSF	3.37	0.28	0.06	0.34	0.07	0.27	0.34
Warehousing (150)		TSF	1.71	0.13	0.04	0.17	0.05	0.13	0.18
Single-Family Attached Housing (215)		DU	7.20	0.15	0.33	0.48	0.32	0.25	0.57
Multifamily Housing Low-Rise (222)		DU	6.74	0.10	0.30	0.40	0.32	0.19	0.51
Hotel (310)		Room	7.99	0.26	0.20	0.46	0.30	0.29	0.59
General Office Building (710)		TSF	10.84	1.34	0.18	1.52	0.24	1.20	1.44
Strip Retail Plaza (822)		TSF	54.45	1.41	0.95	2.36	3.30	3.29	6.59
High-Turnover (Sit-Down) Restaurant (932)		TSF	107.20	5.26	4.31	9.57	5.52	3.53	9.05
Fast Food with Drive-Through (934)		TSF	467.48	22.75	21.86	44.61	17.18	15.85	33.03
<b>Trip Generation</b>									
2223 Katella Avenue	338.000	TSF	1,139	95	20	115	24	91	115
801 E Katella Avenue	28.640	TSF	310	38	6	44	7	34	41
517 E Katella Avenue	5.864	TSF	319	1	1	2	19	20	39
1730 S Anaheim Way	11.038	TSF	19	1	1	2	1	1	2
400 W Disney Way	6.451	TSF	692	34	28	62	36	22	58
(Pass-by Reduction for Restaurant) <sup>2</sup>			(298)	0	0	0	(15)	(10)	(25)
Net 400 W Disney Way			394	34	28	62	21	12	33
900 E Ball Road	105.000	TSF	180	14	4	18	5	14	19
1200 S Anaheim Boulevard	187	DU	1,260	19	56	75	60	35	95
	36	DU	259	5	12	17	12	9	21
	4.586	TSF	250	6	5	11	15	15	30
<i>Total 1200 S Anaheim Boulevard</i>			<i>1,769</i>	<i>30</i>	<i>73</i>	<i>103</i>	<i>87</i>	<i>59</i>	<i>146</i>
270 E Palais Rd	100.000	TSF	337	28	6	34	7	27	34
200 W Midway Drive	159	DU	1,072	16	48	64	51	30	81
1970 S Santa Cruz Street	5.600	TSF	19	2	0	2	0	2	2
125 E Ball Road	88	Room	703	23	17	40	26	26	52
	2.800	TSF	1,309	64	61	125	48	44	92
(Pass-by Reduction for Restaurant) <sup>2</sup>			(679)	(32)	(30)	(62)	(26)	(24)	(50)
Net 125 E Ball Road			1,333	55	48	103	48	46	94

<sup>1</sup> Trip rates referenced from the ITE *Trip Generation Manual*, 11<sup>th</sup> ed. (2021)

<sup>2</sup> Pass-by rates referenced from the 2021 Pass-By Tables for ITE Trip Generation Appendices.

ADT = average daily traffic

ITE = Institute of Transportation Engineers

DU = dwelling unit

TSF = thousand square feet

### Project Traffic

The proposed final site plan for Development Areas C and D includes 508 apartment dwelling units within 6.3 acres. LSA examined the trip generation potential of the proposed project by referencing trip generation rates found in the 2021 Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11<sup>th</sup> Edition. ITE Land Use 221, Multifamily Housing (Mid-Rise) includes “apartments and condominiums located in a building that has between four and ten floors of living space.” Two subcategories are provided depending on whether the land use is within 0.5 mile of the nearest rail transit station. While previous analyses for development within the Platinum Triangle (and A-Town, specifically) have applied a trip reduction due to the proximity of transit, LSA applied the surveyed trip rates for multifamily housing within 0.5 mile of transit consistent with the latest edition of the ITE *Trip Generation Manual*. ITE Land Use 822, Strip Retail Plaza (<40k) provides rates for retail plazas of less than 40,000 sf in total gross

leasable area. Even though the proposed retail area is not designed as a strip development, the size of the proposed retail area makes this the most appropriate dataset.

Internal trips (most likely walking) are anticipated between the retail and residential development within A-Town. This is particularly possible given the mix of residential and retail development within Development Areas C and D. Internal trip capture worksheets (Attachment D) were prepared that estimate a 1 percent internal trip capture in the a.m. peak hour and an 18 percent internal trip capture in the p.m. peak hour. A more conservative internal trip capture rate of 5 percent was applied in the p.m. peak-hour and was applied to the daily trips as well, because many midday trips are likely home-shopping trips.

Some of the traffic entering the driveway of the commercial land uses are expected to originate from traffic already present on Katella Avenue adjacent to the site. ITE provides survey data of what percentage of attracted trips already pass by a project site. Data in the appendix of the ITE *Trip Generation Manual*, 11<sup>th</sup> Edition, shows a 43 percent pass-by rate for restaurants and 40 percent pass-by rate for shopping plazas between 40,000 sf and 150,000 sf. Pass-by data are not provided for shopping plazas less than 40,000 sf. Due to this lack of data, LSA applied the shopping center pass-by rate identified in the 2017 ITE *Trip Generation Handbook*, 3<sup>rd</sup> Edition, which is 34 percent of p.m. peak-hour trips.

Table B shows that the anticipated trip generation for Development Areas C and D is 2,916 daily trips, of which 160 trips would occur in the a.m. peak hour and 206 trips would occur in the p.m. peak hour. The same trip distribution patterns as analyzed in the Master Plan were applied using Traffix software to determine the trip assignment for Development Areas C and D at Lewis Street/Katella Avenue. Project traffic from Development Areas C and D were added to existing traffic resulting in Existing Plus Project traffic volumes. Project traffic from Development Areas C and D were added to Opening Year (2024) No Project traffic volumes to form the Opening Year (2024) Plus Project traffic conditions.

**Table B: Trip Generation**

Land Use	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
<b>Trip Rates<sup>1</sup></b>									
Multifamily Housing, Mid-Rise (221) Close to Rail Transit <sup>2</sup>	–	DU	3.96	0.08	0.15	0.23	0.15	0.11	0.26
Multifamily Housing, Mid-Rise (221) Not Close to Rail Transit	–	DU	4.54	0.09	0.28	0.37	0.24	0.15	0.39
Strip Retail Plaza (<40k) (822)	–	TSF	54.45	1.42	0.94	2.36	3.29	3.30	6.59
<b>Proposed Project Trip Generation</b>									
Development Area C	253	DU	1,002	20	38	58	38	28	66
Development Area D	255	DU	1,010	21	38	59	38	28	66
Development Area C Retail	18.250	TSF	994	26	17	43	60	60	120
Internal Trip Capture (5% ADT, 1% AM, 5% PM)			(50)	(0)	(0)	(0)	(3)	(3)	(6)
Pass-By (34% of PM trips)			(40)	(0)	(0)	(0)	(20)	(20)	(40)
Net Retail Trips			906	26	17	43	37	37	74
<b>Trip Generation</b>			<b>2,916</b>	<b>67</b>	<b>93</b>	<b>160</b>	<b>113</b>	<b>93</b>	<b>206</b>

<sup>1</sup> Trip rates are referenced from the ITE *Trip Generation Manual*, 11<sup>th</sup> Edition (2021).

<sup>2</sup> “Close to Rail Transit” higher peak-hour rates were applied.

ADT = average daily trips      ITE = Institute of Transportation Engineers

DU = dwelling units

### Level of Service Analysis

LOS calculations were prepared using Traffix analysis software assuming existing turn lanes. Attachment B provides the Existing and Existing Plus Project LOS worksheets. Table C provides a comparison of Lewis Street/Katella Avenue performance in the Existing and Existing Plus Project LOS. As Table C shows, the intersection of Lewis Street/Katella Avenue is anticipated to operate at satisfactory LOS in both the a.m. and p.m. peak hours without or with the project. The addition of A-Town Development Areas C and D would increase the volume-to-capacity ratio by 0.010 in the p.m. peak hour, which is less than the City’s 0.050 significance threshold for intersections operating at LOS C.

**Table C: Existing and Existing Plus Project Intersection LOS Summary**

Intersection	Existing				Existing Plus Project				Project Impact	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour	PM Peak Hour
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS		
Lewis Street/Katella Avenue	0.570	A	0.790	C	0.588	A	0.800	C	0.018	0.010

ICU = intersection capacity utilization  
 LOS = level of service

Opening Year conditions were also analyzed assuming existing turn lanes. Attachment C provides the Opening Year (2024) Plus Project LOS worksheets. Table D provides a comparison of Lewis Street/Katella Avenue performance in the Opening Year (2024) No Project and Opening Year (2024) Plus Project LOS. As Table C shows, the intersection of Lewis Street/Katella Avenue is anticipated to operate at satisfactory LOS in both the a.m. and p.m. peak hours without or with the project. The addition of A-Town Development Areas C and D would increase the volume-to-capacity ratio by 0.010 in the p.m. peak hour, which is less than the City’s 0.030 significance threshold for intersections operating at LOS D.

**Table D: Opening Year (2024) Intersection LOS Summary**

Intersection	Opening Year (2024) No Project				Opening Year (2024) Plus Project				Project Impact	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour	PM Peak Hour
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS		
Lewis Street/Katella Avenue	0.590	A	0.809	D	0.608	B	0.819	D	0.018	0.010

ICU = intersection capacity utilization  
 LOS = level of service

Because the intersection of Lewis Street/Katella Avenue is anticipated to operate at a satisfactory LOS without or with the project in the project opening year, and the project would have a less than significant impact according to the City’s guidelines, no modification of Lewis Street/Katella Avenue would be needed by the opening of Development Areas C and D. As stated above, overall traffic volumes were lower in 2022 than pre-pandemic conditions. In particular, some critical movement traffic volumes were lower by more than 10 percent even with full operation of area schools and employers. While previous analyses concluded that the intersection of Lewis Street/Katella Avenue is anticipated to operate at unsatisfactory LOS by the expected opening year, these lower traffic volumes are the reason that conclusion has changed.

## Conclusion

This analysis collected updated existing intersection turn volumes for the intersection of Lewis Street/Katella Avenue. A comparison of intersection performance in Existing and Existing Plus Project conditions showed that the project traffic of Development Areas C and D would have a less than significant impact. The intersection would operate at satisfactory LOS in Existing Plus Project conditions. A comparison of intersection performance in Opening Year (2024) No Project and Opening Year (2024) Plus Project conditions showed that the project traffic of Development Areas C and D would have a less than significant impact. The intersection is anticipated to operate at satisfactory LOS in Opening Year (2024) Plus Project conditions.

No modification of Lewis Street/Katella Avenue would be needed by the opening of Development Areas C and D. The revision of the previous conclusions that the intersection of Lewis Street/Katella Avenue is anticipated to operate at unsatisfactory LOS by the expected opening year is due to traffic volumes in 2022 being lower than pre-pandemic traffic volumes even with full operation of area schools and employers.

Sincerely,

**LSA Associates, Inc.**

Arthur Black  
Principal

Attachments: A: Existing Traffic Volume Data  
B: Existing and Existing Plus Project LOS Worksheets  
C: Opening Year (2024) No Project and Opening Year (2024) Plus Project LOS Worksheets  
D: A-Town Internal Trip Capture Worksheets

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## ATTACHMENT A

### EXISTING TRAFFIC VOLUME DATA



City of Anaheim  
 N/S: Lewis Street  
 E/W: Katella Avenue  
 Weather: Clear

File Name : ANA\_Lewis\_Katella AM  
 Site Code : 00322794  
 Start Date : 9/14/2022  
 Page No : 1

Groups Printed- Total Volume

Start Time	Lewis Street Southbound				Katella Avenue Westbound				Lewis Street Northbound				Katella Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	16	4	54	74	7	207	11	225	2	7	5	14	64	199	10	273	586
07:15 AM	15	0	48	63	14	192	15	221	6	9	4	19	86	180	7	273	576
07:30 AM	29	1	58	88	15	202	12	229	8	22	7	37	76	268	6	350	704
07:45 AM	24	5	60	89	9	201	18	228	7	12	5	24	92	257	10	359	700
Total	84	10	220	314	45	802	56	903	23	50	21	94	318	904	33	1255	2566
08:00 AM	34	4	51	89	5	185	17	207	4	21	3	28	93	225	7	325	649
08:15 AM	24	5	55	84	12	189	18	219	0	15	6	21	100	227	8	335	659
08:30 AM	52	2	53	107	19	229	27	275	4	16	7	27	76	178	8	262	671
08:45 AM	18	2	41	61	6	187	16	209	9	12	8	29	70	233	8	311	610
Total	128	13	200	341	42	790	78	910	17	64	24	105	339	863	31	1233	2589
Grand Total	212	23	420	655	87	1592	134	1813	40	114	45	199	657	1767	64	2488	5155
Apprch %	32.4	3.5	64.1		4.8	87.8	7.4		20.1	57.3	22.6		26.4	71	2.6		
Total %	4.1	0.4	8.1	12.7	1.7	30.9	2.6	35.2	0.8	2.2	0.9	3.9	12.7	34.3	1.2	48.3	

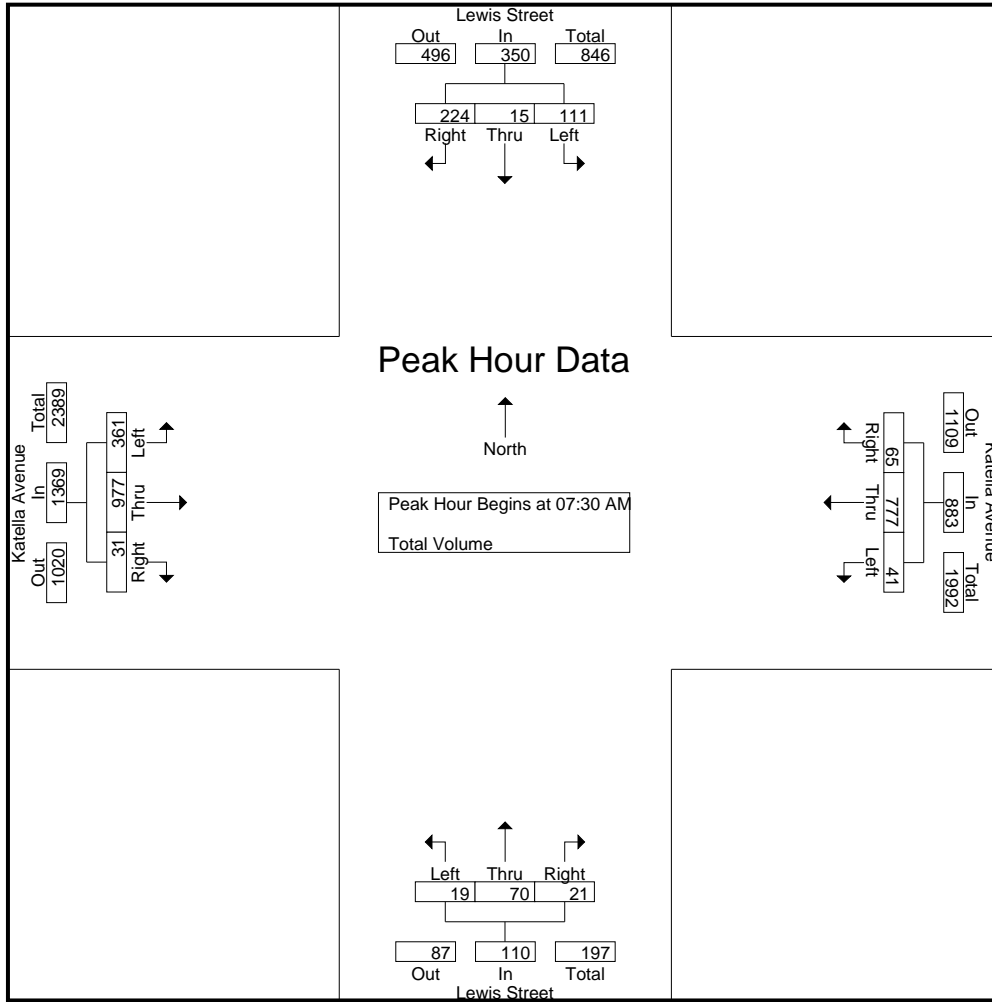
Start Time	Lewis Street Southbound				Katella Avenue Westbound				Lewis Street Northbound				Katella Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:30 AM	29	1	58	88	15	202	12	229	8	22	7	37	76	268	6	350	704
07:45 AM	24	5	60	89	9	201	18	228	7	12	5	24	92	257	10	359	700
08:00 AM	34	4	51	89	5	185	17	207	4	21	3	28	93	225	7	325	649
08:15 AM	24	5	55	84	12	189	18	219	0	15	6	21	100	227	8	335	659
Total Volume	111	15	224	350	41	777	65	883	19	70	21	110	361	977	31	1369	2712
% App. Total	31.7	4.3	64		4.6	88	7.4		17.3	63.6	19.1		26.4	71.4	2.3		
PHF	.816	.750	.933	.983	.683	.962	.903	.964	.594	.795	.750	.743	.903	.911	.775	.953	.963

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:30 AM

City of Anaheim  
 N/S: Lewis Street  
 E/W: Katella Avenue  
 Weather: Clear

File Name : ANA\_Lewis\_Katella AM  
 Site Code : 00322794  
 Start Date : 9/14/2022  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:30 AM				07:30 AM			
+0 mins.	24	5	60	89	9	201	18	228	8	22	7	37	76	268	6	350
+15 mins.	34	4	51	89	5	185	17	207	7	12	5	24	92	257	10	359
+30 mins.	24	5	55	84	12	189	18	219	4	21	3	28	93	225	7	325
+45 mins.	52	2	53	107	19	229	27	275	0	15	6	21	100	227	8	335
Total Volume	134	16	219	369	45	804	80	929	19	70	21	110	361	977	31	1369
% App. Total	36.3	4.3	59.3		4.8	86.5	8.6		17.3	63.6	19.1		26.4	71.4	2.3	
PHF	.644	.800	.913	.862	.592	.878	.741	.845	.594	.795	.750	.743	.903	.911	.775	.953

City of Anaheim  
 N/S: Lewis Street  
 E/W: Katella Avenue  
 Weather: Clear

File Name : ANA\_Lewis\_Katella PM  
 Site Code : 00322794  
 Start Date : 9/14/2022  
 Page No : 1

Groups Printed- Total Volume

Start Time	Lewis Street Southbound				Katella Avenue Westbound				Lewis Street Northbound				Katella Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	26	1	109	136	1	322	13	336	7	30	5	42	58	179	4	241	755
04:15 PM	24	5	109	138	7	356	16	379	17	38	6	61	40	194	3	237	815
04:30 PM	24	1	109	134	7	366	19	392	9	28	8	45	56	220	6	282	853
04:45 PM	35	2	88	125	9	401	32	442	9	20	7	36	52	165	2	219	822
Total	109	9	415	533	24	1445	80	1549	42	116	26	184	206	758	15	979	3245
05:00 PM	40	2	141	183	4	372	21	397	18	42	4	64	58	176	2	236	880
05:15 PM	24	3	89	116	5	440	26	471	13	40	6	59	65	231	7	303	949
05:30 PM	29	3	95	127	3	394	22	419	6	53	13	72	55	196	4	255	873
05:45 PM	23	3	57	83	4	353	13	370	10	33	7	50	62	200	5	267	770
Total	116	11	382	509	16	1559	82	1657	47	168	30	245	240	803	18	1061	3472
Grand Total	225	20	797	1042	40	3004	162	3206	89	284	56	429	446	1561	33	2040	6717
Apprch %	21.6	1.9	76.5		1.2	93.7	5.1		20.7	66.2	13.1		21.9	76.5	1.6		
Total %	3.3	0.3	11.9	15.5	0.6	44.7	2.4	47.7	1.3	4.2	0.8	6.4	6.6	23.2	0.5	30.4	

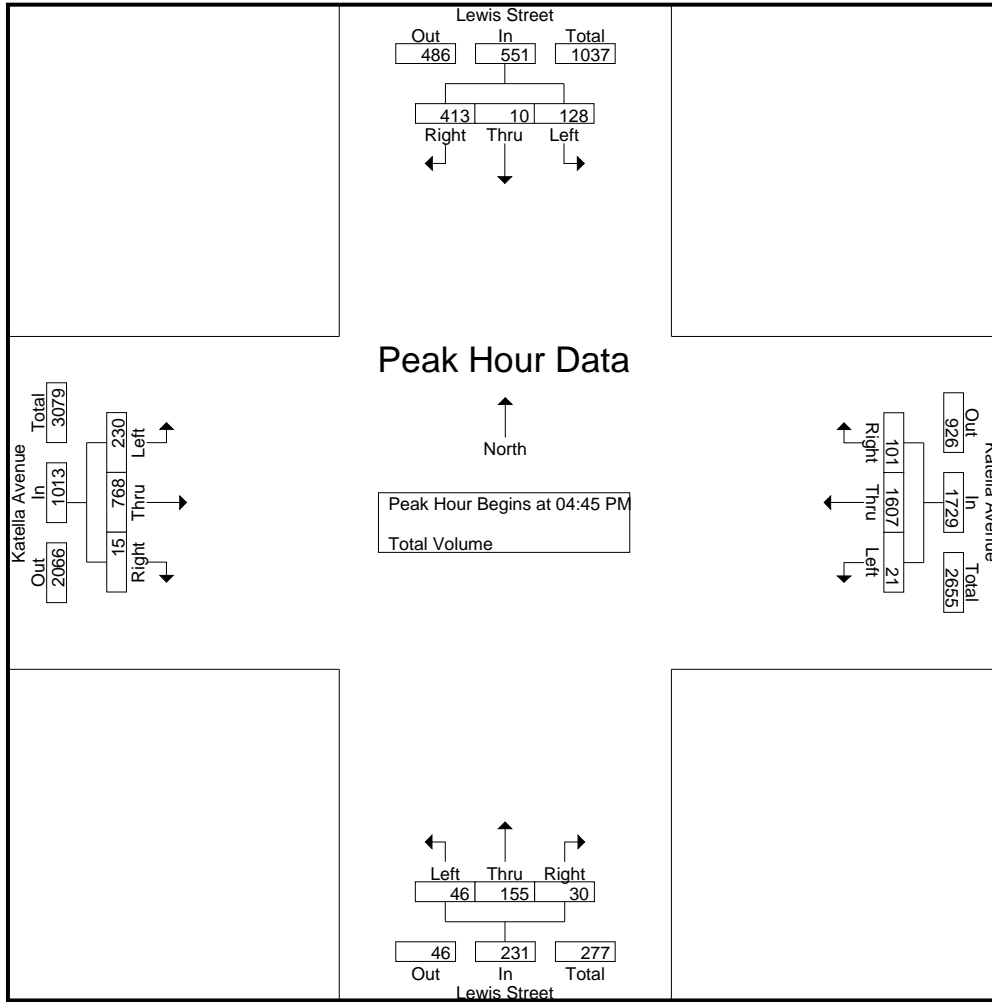
Start Time	Lewis Street Southbound				Katella Avenue Westbound				Lewis Street Northbound				Katella Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:45 PM	35	2	88	125	<b>9</b>	401	<b>32</b>	442	9	20	7	36	52	165	2	219	822
05:00 PM	<b>40</b>	2	<b>141</b>	<b>183</b>	4	372	21	397	<b>18</b>	42	4	64	58	176	2	236	880
05:15 PM	24	<b>3</b>	89	116	5	<b>440</b>	26	<b>471</b>	13	40	6	59	<b>65</b>	<b>231</b>	<b>7</b>	<b>303</b>	<b>949</b>
05:30 PM	29	3	95	127	3	394	22	419	6	<b>53</b>	<b>13</b>	<b>72</b>	55	196	4	255	873
Total Volume	128	10	413	551	21	1607	101	1729	46	155	30	231	230	768	15	1013	3524
% App. Total	23.2	1.8	75		1.2	92.9	5.8		19.9	67.1	13		22.7	75.8	1.5		
PHF	.800	.833	.732	.753	.583	.913	.789	.918	.639	.731	.577	.802	.885	.831	.536	.836	.928

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:45 PM

City of Anaheim  
 N/S: Lewis Street  
 E/W: Katella Avenue  
 Weather: Clear

File Name : ANA\_Lewis\_Katella PM  
 Site Code : 00322794  
 Start Date : 9/14/2022  
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:45 PM				05:00 PM				05:00 PM			
+0 mins.	24	5	109	138	9	401	32	442	18	42	4	64	58	176	2	236
+15 mins.	24	1	109	134	4	372	21	397	13	40	6	59	65	231	7	303
+30 mins.	35	2	88	125	5	440	26	471	6	53	13	72	55	196	4	255
+45 mins.	40	2	141	183	3	394	22	419	10	33	7	50	62	200	5	267
Total Volume	123	10	447	580	21	1607	101	1729	47	168	30	245	240	803	18	1061
% App. Total	21.2	1.7	77.1		1.2	92.9	5.8		19.2	68.6	12.2		22.6	75.7	1.7	
PHF	.769	.500	.793	.792	.583	.913	.789	.918	.653	.792	.577	.851	.923	.869	.643	.875

---

## ATTACHMENT B

### EXISTING AND EXISTING PLUS PROJECT LOS WORKSHEETS

Lennar Master Planned Community  
Platinum Triangle

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Lewis Street/Katella Avenue

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.570  
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 27 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	0	1	0	2	1	0	2

Volume Module: >> Count Date: 14 Sep 2022 <<

Base Vol:	19	70	21	111	15	224	361	977	31	41	777	65
Growth 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
Initial Bse:	19	70	21	111	15	224	361	977	31	41	777	65
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	70	21	111	15	224	361	977	31	41	777	65
User 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
PHF 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
PHF Volume:	19	70	21	111	15	224	361	977	31	41	777	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	70	21	111	15	224	361	977	31	41	777	65
PCE 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
MLF 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
FinalVolume:	19	70	21	111	15	224	361	977	31	41	777	65

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.77	0.23	1.00	1.00	1.00	1.00	2.91	0.09	1.00	2.77	0.23
Final Sat.:	1700	1308	392	1700	1700	1700	1700	4943	157	1700	4706	394

Capacity Analysis Module:

Vol/Sat:	0.01	0.05	0.05	0.07	0.01	0.13	0.21	0.20	0.20	0.02	0.17	0.17
Crit Moves:	****					****	****			****		

\*\*\*\*\*

Lennar Master Planned Community
Platinum Triangle

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Lewis Street/Katella Avenue

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.790
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 50 Level Of Service: C

\*\*\*\*\*

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement (L, T, R), Control (Permitted, Protected), Rights (Include), Min. Green, Y+R, Lanes.

Volume Module: >> Count Date: 14 Sep 2022 <<

Table with 12 columns for volume counts and 11 rows for various adjustment factors like Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 2 rows: Vol/Sat, Crit Moves.

\*\*\*\*\*

Lennar Master Planned Community
Platinum Triangle

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Lewis Street/Katella Avenue

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.588
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

\*\*\*\*\*

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: >> Count Date: 14 Sep 2022 <<

Table with 13 columns representing different volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 13 columns for saturation flow factors. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 13 columns for capacity analysis factors. Rows include Vol/Sat and Crit Moves.

\*\*\*\*\*



Lennar Master Planned Community  
Platinum Triangle

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Lewis Street/Katella Avenue

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.800  
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
 Optimal Cycle: 52 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	0	1	0	2	1	0	2

Volume Module: >> Count Date: 14 Sep 2022 <<

Base Vol:	46	155	30	128	10	413	230	768	15	21	1607	101
Growth 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
Initial Bse:	46	155	30	128	10	413	230	768	15	21	1607	101
Added Vol:	0	0	14	0	0	0	0	101	0	0	48	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	155	44	128	10	413	230	869	15	21	1655	101
User 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
PHF 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
PHF Volume:	46	155	44	128	10	413	230	869	15	21	1655	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	155	44	128	10	413	230	869	15	21	1655	101
PCE 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
MLF 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
FinalVolume:	46	155	44	128	10	413	230	869	15	21	1655	101

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.78	0.22	1.00	1.00	1.00	1.00	2.95	0.05	1.00	2.83	0.17
Final Sat.:	1700	1324	376	1700	1700	1700	1700	5013	87	1700	4807	293

Capacity Analysis Module:

Vol/Sat:	0.03	0.12	0.12	0.08	0.01	0.24	0.14	0.17	0.17	0.01	0.34	0.34
Crit Moves:	****					****	****				****	

\*\*\*\*\*

## **ATTACHMENT C**

### **OPENING YEAR (2024) AND OPENING YEAR (2024) PLUS PROJECT LOS WORKSHEETS**

Lennar Master Planned Community  
Platinum Triangle

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Lewis Street/Katella Avenue

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.590  
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 28 Level Of Service: A

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	0	1	0	2	1	0	1

Volume Module:

Base Vol:	19	70	21	111	15	224	361	977	31	41	777	65
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	19	71	21	113	15	228	368	997	32	42	793	66
Added Vol:	0	0	2	0	0	0	0	17	0	0	72	0
Cumulative:	0	0	0	0	0	1	1	71	0	0	37	0
Initial Fut:	19	71	23	113	15	229	369	1085	32	42	902	66
User 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
PHF 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
PHF Volume:	19	71	23	113	15	229	369	1085	32	42	902	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	71	23	113	15	229	369	1085	32	42	902	66
PCE 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
MLF 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
FinalVolume:	19	71	23	113	15	229	369	1085	32	42	902	66

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.75	0.25	1.00	1.00	1.00	1.00	2.92	0.08	1.00	3.00	1.00
Final Sat.:	1700	1280	420	1700	1700	1700	1700	4956	144	1700	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.01	0.06	0.06	0.07	0.01	0.13	0.22	0.22	0.22	0.02	0.18	0.04
Crit Moves:	****					****	****				****	

\*\*\*\*\*

Lennar Master Planned Community  
Platinum Triangle

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Lewis Street/Katella Avenue

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.809  
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx  
Optimal Cycle: 54 Level Of Service: D

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	1	0	0	1	0	2	1	0	1

Volume Module:

Base Vol:	46	155	30	128	10	413	230	768	15	21	1607	101
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	47	158	31	131	10	421	235	783	15	21	1639	103
Added Vol:	0	0	7	0	0	0	0	68	0	0	38	0
Cumulative:	0	0	0	0	0	1	1	36	0	0	80	0
Initial Fut:	47	158	38	131	10	422	236	887	15	21	1757	103
User 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
PHF 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
PHF Volume:	47	158	38	131	10	422	236	887	15	21	1757	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	158	38	131	10	422	236	887	15	21	1757	103
PCE 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
MLF 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
FinalVolume:	47	158	38	131	10	422	236	887	15	21	1757	103

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.81	0.19	1.00	1.00	1.00	1.00	2.95	0.05	1.00	3.00	1.00
Final Sat.:	1700	1373	327	1700	1700	1700	1700	5014	86	1700	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.03	0.12	0.12	0.08	0.01	0.25	0.14	0.18	0.18	0.01	0.34	0.06
Crit Moves:	****					****	****				****	

\*\*\*\*\*

Lennar Master Planned Community
Platinum Triangle

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Lewis Street/Katella Avenue

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.608
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: B

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module:

Table with 13 columns representing different volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, Cumulative, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 13 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 13 columns. Rows include Vol/Sat and Crit Moves.

\*\*\*\*\*

Lennar Master Planned Community
Platinum Triangle

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*

Intersection #3 Lewis Street/Katella Avenue

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.819
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 56 Level Of Service: D

\*\*\*\*\*

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement (L, T, R), Control (Permitted, Protected), Rights (Include), Min. Green, Y+R, Lanes.

Volume Module:

Table with 12 columns for different volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, Cumulative, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume) and 4 rows of data.

Saturation Flow Module:

Table with 12 columns for saturation flow metrics (Sat/Lane, Adjustment, Lanes, Final Sat) and 4 rows of data.

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics (Vol/Sat, Crit Moves) and 2 rows of data.

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## ATTACHMENT D

### A-TOWN INTERNAL TRIP CAPTURE WORKSHEETS

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	A-Town DA C and D			Organization:	LSA
Project Location:	Anaheim			Performed By:	AB
Scenario Description:				Date:	9/16/2022
Analysis Year:				Checked By:	
Analysis Period:	AM Street Peak Hour			Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips <sup>3</sup>		
	ITE LUCs <sup>1</sup>	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				117	41	76
Restaurant				0		
Cinema/Entertainment				0		
Residential				43	26	17
Hotel				0		
All Other Land Uses <sup>2</sup>				0		
				160	67	93

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses <sup>2</sup>						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail	0					
Restaurant	0	0				
Cinema/Entertainment	0	0	0			
Residential	0	0	0	0		
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	160	67	93
Internal Capture Percentage	1%	1%	1%
External Vehicle-Trips <sup>5</sup>	158	66	92
External Transit-Trips <sup>6</sup>	0	0	0
External Non-Motorized Trips <sup>6</sup>	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	0%	1%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	4%	0%
Hotel	N/A	N/A

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

<sup>4</sup>Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

<sup>6</sup>Person-Trips

\*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1



NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	A-Town DA C and D	Organization:	LSA
Project Location:	Anaheim	Performed By:	AB
Scenario Description:		Date:	9/16/2022
Analysis Year:		Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips <sup>3</sup>		
	ITE LUCs <sup>1</sup>	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				132	76	56
Restaurant				0		
Cinema/Entertainment				0		
Residential				120	60	60
Hotel				0		
All Other Land Uses <sup>2</sup>				0		
				252	136	116

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses <sup>2</sup>						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	15	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	8	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	252	136	116
Internal Capture Percentage	18%	17%	20%
External Vehicle-Trips <sup>5</sup>	206	113	93
External Transit-Trips <sup>6</sup>	0	0	0
External Non-Motorized Trips <sup>6</sup>	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	11%	27%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	25%	13%
Hotel	N/A	N/A

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

<sup>4</sup>Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.

<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

<sup>6</sup>Person-Trips

\*Indicates computation that has been rounded to the nearest whole number.

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