LADWP
SILVER LAKE RESERVOIR COMPLEX
BASELINE TRAFFIC STUDY

NOVEMBER 2018

Prepared For:

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1. Introduction

The purpose of this traffic study is to characterize the existing baseline traffic conditions at the Silver Lake Reservoir Complex (SLRC). This traffic study focuses on the current access driveway configuration at the Armstrong Avenue/Tesla Avenue-Lakewood Avenue intersection, and considers recommendations to improve the traffic conditions and pedestrian safety at the intersection and surrounding local residential roadway segments.

A. Study Area

This study characterizes existing conditions on the roadway network near the SLRC entrance at the intersection adjacent to the access driveway location, and three roadway segments in the local residential neighborhood.

The weekday peak-period intersection (6:00 AM to 9:00 AM) and weekday daily roadway segment counts were compiled from new counts conducted in the area on October 10 and 11, 2018, for this report. The following are the study roadway segments included in this analysis:

1. Tesla Avenue, west of Armstrong Avenue
2. Lakewood Avenue, north of Tesla Avenue
3. Armstrong Avenue, north of Tesla Avenue
4. Armstrong Avenue, south of Tesla Avenue

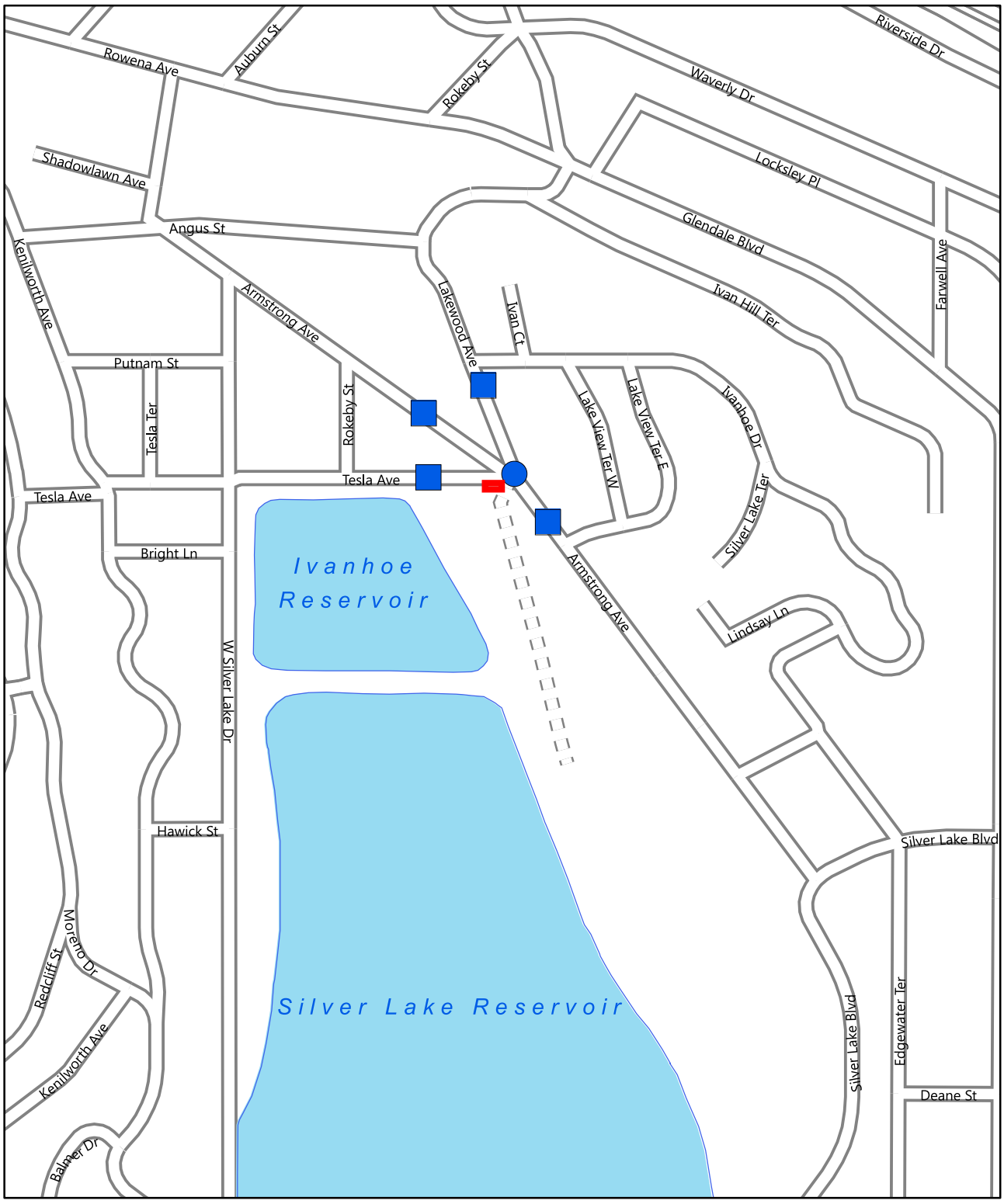
The traffic study area is illustrated on Figure 1.

The traffic count summary for the study intersection is provided in Attachment A. The daily traffic count summaries collected for the study roadway segments are provided in Attachment B.

FIGURE 1

LADWP Silver Lake Reservoir Complex

Traffic Study Area



All-way stop

Roadway segment locations

Access Driveway

Internal Access Road

0 300 600 1,200 Feet

N

2. Existing Conditions

The following describes the traffic study area, as defined within Section 1.

Direct vehicular access to the SLRC is provided via the main driveway located immediately west of the Armstrong Avenue/Tesla Avenue-Lakewood Avenue intersection.

A. Roadway Network Characteristics

The following describes the study area, and special facility characteristics present along the local roadway routes to and from the SLRC. The study roadways do not have posted regulatory speed limit signs, and therefore the prima facie residential speed limit of 25 miles per hour (mph) applies.

Tesla Avenue is a one-way westbound roadway, located along the north side of the reservoir complex. The roadway does not have posted regulatory speed limit signs, and therefore the prima facie residential speed limit of 25 miles per hour (mph) applies.

Lakewood Avenue is a two-lane roadway. It does not have posted regulatory speed limit signs, and therefore the prima facie residential speed limit of 25 miles per hour (mph) applies.

Armstrong Avenue is a two-lane local residential roadway. On the northern study roadway segment of Armstrong Avenue (north of Tesla Avenue), speed humps are present and advisory (yellow-color) speed limit signs of 15 mph are posted at each hump. The remainder of the roadway does not have posted regulatory speed limit signs, and therefore the prima facie residential speed limit of 25 miles per hour (mph) applies.

B. Existing Bicycle Facilities

To the north of the study area, bicycle lanes are provided on both sides of Rowena Avenue, to the west of Glendale Boulevard. On the east side of the reservoir complex, Silver Lake Boulevard has bicycle lanes along both side of the roadway.

Armstrong Avenue and Silver Lake Drive are targeted for improvements by the City, under the Neighborhood Enhanced Network (NEN) designation within the Mobility Plan 2035. As outlined in the Mobility Plan, improvements are targeted for these corridors, where warranted, to "support neighborhood pedestrian activity" and to "provide a slow speed network of locally serving streets."

C. Existing Pedestrian Facilities

Pedestrian facilities in the vicinity of the SLRC include sidewalks along the local roadways.

Tesla Avenue has a continuous sidewalk along its south side within the study area. On the north side, the sidewalk is not continuous.

Lakewood Avenue has a continuous sidewalk along its west side within the study area. On the east side, the sidewalk is not continuous.

Armstrong Avenue has a continuous sidewalk along both sides of the roadway within the study area.

The reservoir complex site has a surrounding pedestrian network. On the other area roadways, sidewalks or paths are provided. Along Silver Lake Drive, at the west side of the complex, a soft-surface trail is provided instead of a sidewalk on the east side of the roadway, and a discontinuous sidewalk is present on the west side of the roadway. Along Silver Lake Boulevard, at the east side of the complex, a soft-surface trail with traffic barriers is provided instead of a sidewalk on the west side of the roadway, and a sidewalk is present on the east side of the roadway. Along Armstrong Avenue, a soft-surface trail is provided along the west side of the roadway, and a sidewalk is provided along the east side of the roadway. The local roadway network along the south side of the complex includes sidewalks.

Potential Driveway Vehicle/Pedestrian Conflicts

There is high pedestrian activity in the area, as the reservoir complex and its perimeter pedestrian network, lack of regularly-occurring driveways, and general setting is appealing for exercise. Joggers and walkers regularly use the loop around the overall reservoir site. Pedestrian crossing activity at the study intersection is not high, but the access driveway connection to Tesla Avenue has a generally high level of pedestrian crossings.

Monitoring was conducted during morning hours, from 6:30 AM to 9:00 AM, at the study intersection and access driveway, to monitor traffic operations and pedestrian activity.

Photograph 1 provides a view from Lakewood Avenue (north of the study intersection), looking south to the study intersection and the access driveway access point. Some pedestrian activity is occurring and low traffic volumes are present.

Photograph 2 provides the same view from Lakewood Avenue, with an LADWP work truck departing the property. There continues to be some pedestrian activity, but there are no conflicts at the driveway.

Photograph 1 – View 1 from Lakewood Avenue to South, 9:00 AM Hour

Photograph 2 – View 2 from Lakewood Avenue to South, 9:00 AM Hour

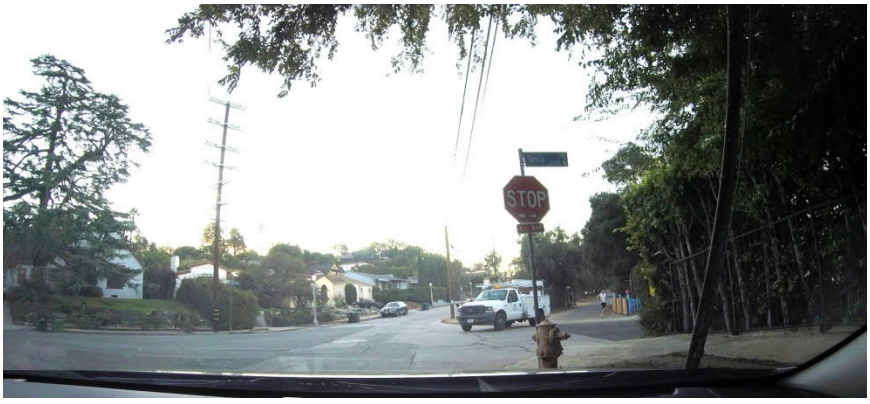
Photograph 3 provides the same view from Lakewood Avenue, with an LADWP work truck entering the property while yielding to a pedestrian. There is pedestrian activity on both sides of the intersection, and another vehicle is traversing the study intersection.

Photograph 4 provides a view from Armstrong Avenue (north of the study intersection), looking south to the study intersection and the access driveway access point. An LADWP work vehicle has exited the site, after yielding to a pedestrian.

Gaps between passing pedestrians and driveway vehicle trips occur regularly and this avoids frequent conflicts at the SLRC driveway apron. The ability of drivers of exiting vehicles at this driveway and oncoming crossing pedestrians to adequately see each other is reviewed next.

Photograph 3 – View 3 from Lakewood Avenue
to South, 7:00 AM Hour

Photograph 4 – View from Armstrong Avenue
to South, 7:00 AM Hour

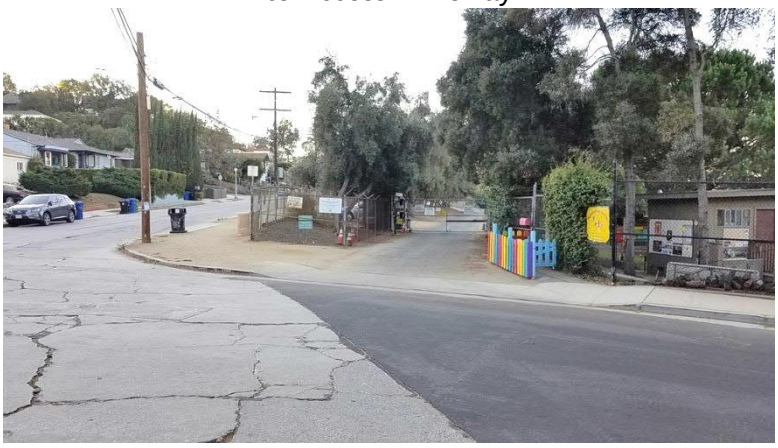


The visibility of the access driveway from the sidewalk in both directions was reviewed to determine if vehicles exiting the site and pedestrians have good sight distance of each other when approaching the conflict point at the driveway apron on Tesla Avenue.

Photograph 5 provides a view of the access driveway, from within the study intersection, looking south. The driveway gate is set back, so that entering vehicles can pull into the site and wait for gate operation without blocking the sidewalk.

Photograph 6 provides a view of the access driveway, from within the study intersection, looking west. As a chain link fence is present, and no opaque obstacles are present, existing vehicles at the driveway and pedestrians can see each other's movements and therefore safe conditions are present.

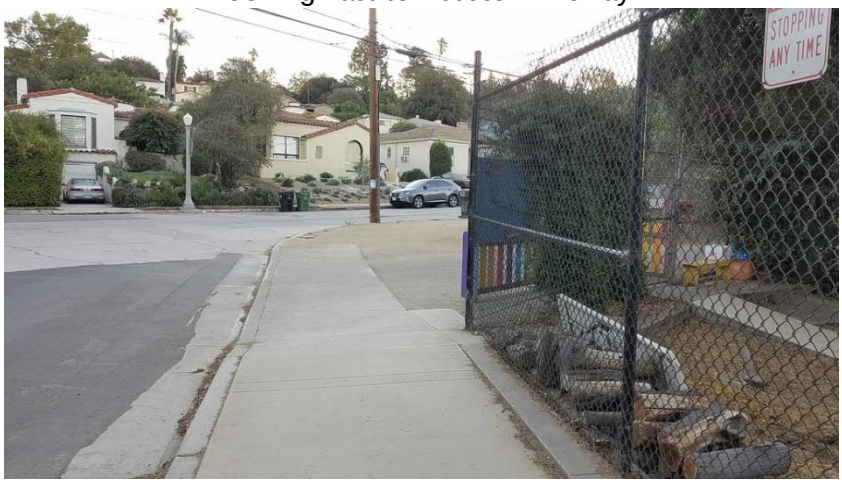
Photograph 5 – View from Study Intersection
to Access Driveway



Photograph 6 – View from South Corner of Study Intersection,
Looking West to Access Driveway

Photograph 7 provides a view of the access driveway, from Tesla Avenue looking east. Plants, signs, and other elements related to the adjacent daycare facility block views of the sidewalk and the driveway, and vice versa. This makes it difficult for exiting vehicles at the driveway and oncoming walkers or joggers to have adequate sight distance for stopping and avoiding conflicts at the driveway apron.

Photograph 7 – View from Tesla Avenue,
Looking East to Access Driveway



D. Study Intersection Operations

Based on the AM peak hour counts at the study intersection and the existing lane configuration and all-way stop control, existing average vehicle delay and level of service (LOS) were calculated. As shown in Table 1, the existing average approaching vehicle delay of eight seconds results in an LOS value of A.

Table 1 –Study Intersection -Existing Volumes

	Study Intersections	Peak Hour	Existing Conditions	
			ICU or Delay	LOS
1	Armstrong Avenue & Lakewood Avenue/Tesla Avenue	AM	8.0	A

E. Study Roadway Segments Operations

According the City of Los Angeles Mobility Element, Tesla Avenue and Lakewood Avenue are local roadways and the other two roadway segments are collector roadways. A two-lane collector roadway, generally based on the Highway Capacity Manual, would have a capacity of approximately 5,000 daily trips. For local roadways, daily capacity would be theoretically lower, but such capacities are difficult to define for daily conditions, based on the low-intensity nature of local roadways. Table 2 shows the existing volume on the study area roadway segments.

Table 2 –Study Roadway Segments - Existing Volumes

	Roadway Segment	Existing ADT
A	Tesla Avenue, West of Armstrong	859
B	Lakewood Avenue, North of Tesla	1,455
C	Armstrong Avenue North of Tesla	1,759
D	Armstrong Avenue, South of Tesla	2,631

*ADT = Average Daily Trips

3. Planned Modular Office Installation

LADWP is proposing to relocate approximately 30 staff to the SLRC to be housed in new modular office buildings (Project). The modular office buildings would be installed within an existing LADWP administrative and yard complex located on the east side of the Silver Lake Reservoir. Access to this site is provided by an on-site roadway that traverses the east sides of both the Silver Lake and Ivanhoe reservoirs, and connects to a driveway location immediately west of the Armstrong Avenue/Tesla Avenue - Lakewood Avenue intersection. The typical working shifts for LADWP personnel housed at the SLRC are from 6:30 AM to 4:00 PM. This facility would serve as the reporting location in the morning and they would leave the SLRC to go to the off-site construction locations between 7:30 AM and 9:00 AM. The facility capacity will be 30 people, but on typical days there will be typically 10 or fewer staff members on-site, with the others at other field locations.

There would also be monthly safety meetings of two to three hours in duration, requiring all 30 employees to attend. These meetings would begin at the start of the working shift and end by 9:30 AM or later.

Construction/startup for installation of the modular office trailers would require some site preparation, trailer delivery, set up and utility installation to be performed by LADWP crews. The construction activities and added site employee activity are planned to begin in Fall 2019 and be completed in early 2020.

This section focuses on the definition of employee vehicle trips that are expected to occur during the peak period of Project activities. It is not assumed that delivery and installation of the modular office trailers would generate a significant number of trips, and that activity would be temporary and short-term in nature. Therefore, this analysis focuses on Project operations.

A. Analysis Methodology

KOA analyzed the trip distribution, trip assignment, and daily roadway volumes for the designated study area. In the sections that follow, impacts of the planned Project on study area roadways are discussed. The analysis is based on the impacts of the Project during potential peak days of activity.

B. Project Trip Generation Methodology

Project trip generation calculations included peak employee trips during the AM peak hour, when Project trips would overlap with the peak of area roadway traffic. As either on some days the full site employee capacity of 30 persons may be used, or a site meeting may occur when 30 employees will be present, a peak activity input of 30 employees was used.

Although some carpooling would likely occur during Project activities, trip generation calculations conservatively assumed that each employee would commute in a single personal vehicle. Although Project site meetings would likely end at 9:00 a.m. or later and beyond the peak period of AM street traffic, outbound traffic from the site was also assumed in order to provide a conservative analysis.

C. Trip Generation Totals

The total analyzed peak daily Project trips were defined by 30 inbound employee vehicles and 30 outbound employee vehicles, analyzed conservatively within one peak hour.

Peak-hour trips related to site activity in the PM peak period were not considered as part of this analysis, as employees would not likely be departing directly from the SLRC during this period. Many employees would be at off-site locations throughout the day.

D. Project Trip Distribution

Employee trip patterns were based on the local roadway network that would provide primary access to the SLRC. Equal distribution was assumed to each of the four study roadway segments, and this pattern also defined equal distribution to the turning movements at the analyzed study intersection.

4. Planned Project Impact Analysis

A. Study Area Analysis – Study Intersection

Based on the AM peak hour counts at the study intersection and the existing lane configuration and all-way stop control, existing average vehicle delay and LOS were calculated. The Project trip generation and distribution were then applied to the analysis. The existing average approaching vehicle delay of eight seconds results in an LOS value of A.

Significant impacts would occur if the study intersection was operating at LOS E or F (deficient conditions) with the addition of traffic trips from the planned Project. As shown in Table 3, the planned Project would add 0.2 seconds to overall delay and LOS would remain at a good value of A, and therefore a significant impact would not occur at this location.

Table 3 –Study Intersection -
Existing plus Planned Project Volumes Analysis

Study Intersections		Peak Hour	Existing Conditions		Existing with Project		Change in V/C	Sig Impact?
			ICU or Delay	LOS	ICU or Delay	LOS		
1	Armstrong Avenue & Lakewood Avenue/Tesla Avenue	AM	8.0	A	8.2	A	0.2	No

B. Study Area Analysis – Study Roadway Segments

An analysis was conducted of the existing and with-Project volumes at the study roadway segments. As discussed above, according the City of Los Angeles Mobility Element, Tesla Avenue and Lakewood Avenue are local roadways and the other two roadway segments are collector roadways. A two-lane collector roadway, generally based on the Highway Capacity Manual, would have a capacity of approximately 5,000 daily trips. For local roadways, daily capacity would be theoretically lower, but such capacities are difficult to define for daily conditions, based on the low-intensity nature of local roadways. The 5,000 daily vehicles number was therefore used as a guide in evaluating all of the study roadways.

At all roadway study segments, adequate capacity would remain even with the addition of 30 trips from the planned Project, and driver comfort would not be noticeably affected, which might otherwise occur when approaching the LOS D/E range. As shown in Table 4, and based on the volumes analyzed and a general capacity of 5,000 vehicles per day, all of the roadway segments would operate at LOS A (which relates to a volume-to-capacity ratio of 59 percent or better) with or without the planned Project. Therefore, the planned Project would not create any significant impacts at the study roadway segments.

Table 4 –Study Roadway Segments -
Existing plus Planned Project Volumes Analysis

Roadway Segment		Existing ADT	Existing + Project ADT	Percentage Increase	Significant Impact
A	Tesla Avenue, West of Armstrong	859	919	7.0%	No
B	Lakewood Avenue, North of Tesla	1,455	1,515	4.1%	No
C	Armstrong Avenue North of Tesla	1,759	1,819	3.4%	No
D	Armstrong Avenue, South of Tesla	2,631	2,691	2.3%	No

During days when full staff capacity is not being used, or when monthly meetings are not occurring, Project-generated traffic volumes would decline from these peak levels.

C. Recommended Driveway Treatments and Operations

Improvements to the west side of this driveway approach should be considered, to open the view between the sidewalk and driveway. As part of proposed Project site improvements, modifications to the signage and plantings could be considered, and/or a modification of the fence line. This would require coordination with the daycare center for implementation of a solution.

When multiple vehicles may be entering the site in groups, as would occur before the start of monthly safety meetings, the SLRC access gate should be controlled by an on-site staff member and left open so that the incoming vehicles do not stack over the crosswalk and into the intersection and adjacent roadway travel lanes.

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ATTACHMENT A –
STUDY ROADWAY INTERSECTION AM PEAK-PERIOD
TURN MOVEMENT COUNT SUMMARY

National Data & Surveying Services

Intersection Turning Movement Count

Location: Armstrong Ave & Tesla Ave/Lakewood Ave
City: Los Angeles
Control: 3-Way Stop(NB/SB/WB)

Project ID: 18-05668-001
Date: 10/10/2018

Total

NS/EW Streets:	Armstrong Ave					Armstrong Ave					Tesla Ave/Lakewood Ave					Tesla Ave/Lakewood Ave					SLRC Access Driveway						
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					NORTHBOUND2						
	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L	N2U	N2L2	N2T2	N2R2	N2U2	TOTAL
6:00 AM	1	1	2	0	1	0	1	0	0	0	0	0	0	0	0	0	1	2	0	1		0	0	0	0	0	10
6:15 AM	0	0	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1		0	0	0	0	0	8
6:30 AM	1	2	5	0	5	0	2	0	1	0	0	0	0	0	0	1	2	0	0	0		0	0	0	2	2	23
6:45 AM	4	5	3	0	0	0	6	0	0	0	0	0	0	0	0	2	1	0	0	1		0	0	0	0	0	22
7:00 AM	2	9	5	0	0	1	2	0	0	0	0	0	0	0	0	6	4	1	0	0		0	0	0	0	0	30
7:15 AM	6	15	2	0	1	4	6	1	0	0	0	0	0	0	0	2	5	0	0	0		0	0	0	0	1	43
7:30 AM	11	26	4	0	2	3	6	0	0	0	0	0	0	0	0	4	8	2	0	0		0	2	0	0	0	68
7:45 AM	8	31	10	1	1	0	4	0	0	0	0	0	0	0	0	8	12	1	0	0		0	0	0	0	1	77
8:00 AM	8	21	8	0	2	2	14	1	0	1	0	0	0	0	0	8	24	2	0	0		0	1	0	1	0	93
8:15 AM	15	14	5	0	3	0	12	0	0	0	0	0	0	0	0	7	19	3	0	0		0	1	0	1	1	81
8:30 AM	20	20	6	0	2	4	5	3	0	0	0	0	0	0	0	6	17	0	0	1		0	0	0	0	1	85
8:45 AM	14	22	5	0	7	3	13	2	0	0	0	0	0	0	0	6	7	0	0	0		0	1	0	0	0	80
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L	N2U	N2L2	N2T2	N2R2	N2U2	TOTAL
TOTAL VOLUMES :	90	166	56	1	26	17	75	7	1	1	0	0	0	0	0	50	100	11	0	4	0	0	5	0	4	6	620
APPROACH %'s :	26.55%	48.97%	16.52%	0.29%	7.67%	16.83%	74.26%	6.93%	0.99%	0.99%						30.30%	60.61%	6.67%	0.00%	2.42%	0.00%	0.00%	33.33%	0.00%	26.67%	40.00%	
PEAK HR :	08:00 AM - 09:00 AM																										TOTAL
PEAK HR VOL :	57	77	24	0	14	9	44	6	0	1	0	0	0	0	0	27	67	5	0	1	0	0	3	0	2	2	339
PEAK HR FACTOR :	0.713	0.875	0.750	0.000	0.500	0.563	0.786	0.500	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.844	0.698	0.417	0.000	0.250	0.000	0.000	0.750	0.000	0.500	0.500	0.911
			0.896					0.833										0.735					0.583				

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					NORTHBOUND2						
	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L	N2U	N2L2	N2T2	N2R2	N2U2	TOTAL
3:00 PM	7	14	14	1	2	3	22	0	0	0	0	0	0	0	0	5	5	2	0	0		0	1	0	2	1	79
3:15 PM	4	13	4	0	0	2	17	0	0	0	0	0	1	0	0	3	2	0	0	0		0	1	0	1	2	50
3:30 PM	6	7	6	0	0	4	22	1	0	0	0	0	0	0	0	16	5	1	0	0		0	0	0	1	1	70
3:45 PM	3	12	13	0	0	2	20	0	0	0	0	0	0	0	0	6	4	1	0	0		0	0	0	0	0	61
4:00 PM	4	16	19	0	0	1	18	0	0	0	0	0	0	0	0	9	5	3	0	0		0	1	0	0	0	76
4:15 PM	2	14	22	0	0	4	26	0	0	0	0	0	0	0	0	14	6	0	0	0		0	0	0	0	0	88
4:30 PM	6	15	18	0	0	3	28	0	0	0	0	0	0	0	0	15	10	0	0	0		0	0	0	0	0	95
4:45 PM	7	18	6	0	0	3	16	1	0	0	0	0	0	0	0	11	8	1	0	0		0	0	0	0	0	71
5:00 PM	10	13	19	0	0	7	19	1	0	0	0	0	0	0	0	16	7	1	0	0		0	0	0	0	0	93
5:15 PM	7	20	12	0	0	5	22	3	0	0	0	0	0	0	0	14	10	2	0	0		0	0	0	0	0	95
5:30 PM	11	18	14	0	0	7	37	1	0	0	0	0	0	0	0	22	8	2	0	0		0	0	0	0	0	120
5:45 PM	12	21	19	1	0	4	24	0	0	0	0	0	0	0	0	12	8	1	0	0		0	0	0	0	0	102
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L	N2U	N2L2	N2T2	N2R2	N2U2	TOTAL
TOTAL VOLUMES :	79	181	166	2	2	45	271	7	0	0	0	0	1	0	0	143	78	14	0	0	0	0	3	0	4	4	1000
APPROACH %'s :	18.37%	42.09%	38.60%	0.47%	0.47%	13.93%	83.90%	2.17%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	60.85%	33.19%	5.96%	0.00%	0.00%	0.00%	0.00%	27.27%	0.00%	36.36%	36.36%	
PEAK HR :	05:00 PM - 06:00 PM																										TOTAL
PEAK HR VOL :	40	72	64	1	0	23	102	5	0	0	0	0	0	0	0	64	33	6	0	0	0	0	0	0	0	0	410
PEAK HR FACTOR :	0.833	0.857	0.842	0.250	0.000	0.821	0.689	0.417	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.727	0.825	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.854
			0.835					0.722										0.805									

ATTACHMENT B –
STUDY ROADWAY SEGMENTS 24-HOUR TRAFFIC COUNT SUMMARIES

Prepared by NDS/ATD

VOLUME

Tesla Ave W/O Armstrong Ave

Day: Thursday
Date: 10/11/2018

City: Los Angeles
Project #: CA18_5667_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	0	859	859

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00			0	2	2	12:00			0	8	8
00:15			0	2	2	12:15			0	13	13
00:30			0	3	3	12:30			0	17	17
00:45			0	0	7	0 7	12:45			0	13	51	13 51
01:00			0	0	0	13:00			0	15	15
01:15			0	1	1	13:15			0	8	8
01:30			0	0	0	13:30			0	6	6
01:45			0	0	1	0 1	13:45			0	5	34	5 34
02:00			0	1	1	14:00			0	6	6
02:15			0	1	1	14:15			0	12	12
02:30			0	1	1	14:30			0	9	9
02:45			0	0	3	0 3	14:45			0	16	43	16 43
03:00			0	0	0	15:00			0	13	13
03:15			0	0	0	15:15			0	8	8
03:30			0	0	0	15:30			0	12	12
03:45			0	1	1	1 1	15:45			0	7	40	7 40
04:00			0	1	1	16:00			0	10	10
04:15			0	0	0	16:15			0	8	8
04:30			0	0	0	16:30			0	15	15
04:45			0	1	2	1 2	16:45			0	16	49	16 49
05:00			0	0	0	17:00			0	18	18
05:15			0	1	1	17:15			0	20	20
05:30			0	0	0	17:30			0	21	21
05:45			0	0	1	0 1	17:45			0	21	80	21 80
06:00			0	1	1	18:00			0	29	29
06:15			0	0	0	18:15			0	17	17
06:30			0	4	4	18:30			0	23	23
06:45			0	5	10	5 10	18:45			0	11	80	11 80
07:00			0	7	7	19:00			0	17	17
07:15			0	10	10	19:15			0	15	15
07:30			0	23	23	19:30			0	9	9
07:45			0	19	59	19 59	19:45			0	13	54	13 54
08:00			0	34	34	20:00			0	12	12
08:15			0	35	35	20:15			0	6	6
08:30			0	38	38	20:30			0	3	3
08:45			0	23	130	23 130	20:45			0	7	28	7 28
09:00			0	29	29	21:00			0	4	4
09:15			0	16	16	21:15			0	5	5
09:30			0	10	10	21:30			0	3	3
09:45			0	12	67	12 67	21:45			0	1	13	1 13
10:00			0	8	8	22:00			0	4	4
10:15			0	3	3	22:15			0	3	3
10:30			0	11	11	22:30			0	3	3
10:45			0	19	41	19 41	22:45			0	1	11	1 11
11:00			0	12	12	23:00			0	1	1
11:15			0	8	8	23:15			0	3	3
11:30			0	14	14	23:30			0	3	3
11:45			0	11	45	11 45	23:45			0	2	9	2 9
TOTALS				367	367	TOTALS				492	492
SPLIT %				100.0%	42.7%	SPLIT %				100.0%	57.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	0	859	859

AM Peak Hour				08:00	08:00	PM Peak Hour				17:15	17:15
AM Pk Volume				130	130	PM Pk Volume				91	91
Pk Hr Factor				0.855	0.855	Pk Hr Factor				0.784	0.784
7 - 9 Volume	0	0	0	189	189	4 - 6 Volume	0	0	0	129	129
7 - 9 Peak Hour				08:00	08:00	4 - 6 Peak Hour				17:00	17:00
7 - 9 Pk Volume	0	0	0	130	130	4 - 6 Pk Volume	0	0	0	80	80
Pk Hr Factor	0.000	0.000	0.000	0.855	0.855	Pk Hr Factor	0.000	0.000	0.000	0.952	0.952

Prepared by NDS/ATD

VOLUME

Lakewood Ave N/O Tesla Ave

Day: Thursday
Date: 10/11/2018

City: Los Angeles
Project #: CA18_5667_002

DAILY TOTALS	NB	SB	EB	WB	Total
	597	858	0	0	1,455

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0		12:00	8		12				20	
00:15	0		1				1		12:15	5		7				12	
00:30	0		3				3		12:30	8		14				22	
00:45	0		0	4			0	4	12:45	8	29	10	43			18	72
01:00	1		3				4		13:00	5		12				17	
01:15	0		1				1		13:15	6		13				19	
01:30	1		0				1		13:30	4		8				12	
01:45	0	2	0	4			0	6	13:45	9	24	7	40			16	64
02:00	0		0				0		14:00	5		8				13	
02:15	1		1				2		14:15	14		16				30	
02:30	0		2				2		14:30	3		9				12	
02:45	1	2	0	3			1	5	14:45	12	34	17	50			29	84
03:00	0		0				0		15:00	17		10				27	
03:15	0		0				0		15:15	6		5				11	
03:30	0		0				0		15:30	10		21				31	
03:45	0		0				0		15:45	16	49	10	46			26	95
04:00	2		0				2		16:00	20		18				38	
04:15	0		0				0		16:15	24		21				45	
04:30	0		0				0		16:30	20		26				46	
04:45	0	2	2	2			2	4	16:45	8	72	22	87			30	159
05:00	0		0				0		17:00	25		25				50	
05:15	1		0				1		17:15	17		22				39	
05:30	0		4				4		17:30	20		32				52	
05:45	1	2	1	5			2	7	17:45	23	85	23	102			46	187
06:00	3		4				7		18:00	21		27				48	
06:15	1		1				2		18:15	18		18				36	
06:30	6		4				10		18:30	12		26				38	
06:45	3	13	3	12			6	25	18:45	14	65	12	83			26	148
07:00	5		10				15		19:00	13		18				31	
07:15	6		6				12		19:15	8		15				23	
07:30	8		14				22		19:30	3		13				16	
07:45	10	29	21	51			31	80	19:45	9	33	16	62			25	95
08:00	11		34				45		20:00	7		12				19	
08:15	6		29				35		20:15	4		8				12	
08:30	10		24				34		20:30	5		7				12	
08:45	8	35	14	101			22	136	20:45	6	22	3	30			9	52
09:00	5		12				17		21:00	5		4				9	
09:15	10		14				24		21:15	0		1				1	
09:30	6		12				18		21:30	0		5				5	
09:45	5	26	2	40			7	66	21:45	2	7	0	10			2	17
10:00	7		6				13		22:00	4		2				6	
10:15	3		4				7		22:15	2		7				9	
10:30	5		7				12		22:30	3		3				6	
10:45	8	23	11	28			19	51	22:45	1	10	3	15			4	25
11:00	7		3				10		23:00	1		3				4	
11:15	7		8				15		23:15	2		0				2	
11:30	5		15				20		23:30	0		0				0	
11:45	9	28	10	36			19	64	23:45	2	5	1	4			3	9
TOTALS		162		286				448	TOTALS		435		572				1007
SPLIT %		36.2%		63.8%				30.8%	SPLIT %		43.2%		56.8%				69.2%

DAILY TOTALS	NB	SB	EB	WB	Total
	597	858	0	0	1,455

AM Peak Hour	07:45	07:45			07:45	PM Peak Hour	17:00	17:15			17:00
AM Pk Volume	37	108			145	PM Pk Volume	85	104			187
Pk Hr Factor	0.841	0.794			0.806	Pk Hr Factor	0.850	0.813			0.899
7 - 9 Volume	64	152	0	0	216	4 - 6 Volume	157	189	0	0	346
7 - 9 Peak Hour	07:45	07:45			07:45	4 - 6 Peak Hour	17:00	17:00			17:00
7 - 9 Pk Volume	37	108	0	0	145	4 - 6 Pk Volume	85	102	0	0	187
Pk Hr Factor	0.841	0.794	0.000	0.000	0.806	Pk Hr Factor	0.850	0.797	0.000	0.000	0.899

Prepared by NDS/ATD

VOLUME

Armstrong Ave N/O Tesla Ave

Day: Thursday
Date: 10/11/2018

City: Los Angeles
Project #: CA18_5667_003

DAILY TOTALS	NB	SB	EB	WB	Total
	790	969	0	0	1,759

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	3		0						3		12:00	9		11						20	
00:15	1		1						2		12:15	10		21						31	
00:30	0		1						1		12:30	9		11						20	
00:45	0	4	0	2					0	6	12:45	12	40	17	60					29	100
01:00	1		0						1		13:00	3		14						17	
01:15	0		1						1		13:15	7		12						19	
01:30	0		1						1		13:30	9		7						16	
01:45	1	2	1	3					2	5	13:45	7	26	18	51					25	77
02:00	0		3						3		14:00	12		8						20	
02:15	0		0						0		14:15	4		7						11	
02:30	0		0						0		14:30	8		20						28	
02:45	0		0	3					0	3	14:45	19	43	16	51					35	94
03:00	0		1						1		15:00	14		25						39	
03:15	1		0						1		15:15	13		18						31	
03:30	0		1						1		15:30	7		28						35	
03:45	0	1	1	3					1	4	15:45	12	46	22	93					34	139
04:00	0		0						0		16:00	18		20						38	
04:15	0		0						0		16:15	13		30						43	
04:30	0		0						0		16:30	13		26						39	
04:45	0		0						0		16:45	18	62	19	95					37	157
05:00	0		1						1		17:00	14		29						43	
05:15	1		1						2		17:15	21		30						51	
05:30	1		2						3		17:30	19		45						64	
05:45	1	3	1	5					2	8	17:45	20	74	28	132					48	206
06:00	1		1						2		18:00	21		27						48	
06:15	0		2						2		18:15	13		20						33	
06:30	2		3						5		18:30	22		28						50	
06:45	5	8	5	11					10	19	18:45	20	76	23	98					43	174
07:00	10		3						13		19:00	13		17						30	
07:15	15		8						23		19:15	10		21						31	
07:30	28		10						38		19:30	9		12						21	
07:45	31	84	4	25					35	109	19:45	11	43	15	65					26	108
08:00	20		16						36		20:00	9		11						20	
08:15	13		12						25		20:15	5		9						14	
08:30	20		12						32		20:30	6		10						16	
08:45	22	75	13	53					35	128	20:45	3	23	6	36					9	59
09:00	18		14						32		21:00	8		7						15	
09:15	12		6						18		21:15	11		7						18	
09:30	8		11						19		21:30	7		5						12	
09:45	7	45	7	38					14	83	21:45	3	29	4	23					7	52
10:00	12		12						24		22:00	6		6						12	
10:15	12		14						26		22:15	1		2						3	
10:30	14		8						22		22:30	2		4						6	
10:45	6	44	11	45					17	89	22:45	6	15	8	20					14	35
11:00	10		11						21		23:00	2		2						4	
11:15	8		8						16		23:15	3		3						6	
11:30	9		15						24		23:30	0		2						2	
11:45	10	37	11	45					21	82	23:45	5	10	5	12					10	22
TOTALS		303		233						536	TOTALS		487		736						1223
SPLIT %		56.5%		43.5%						30.5%	SPLIT %		39.8%		60.2%						69.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	790	969	0	0	1,759

AM Peak Hour	07:15	11:30			07:30	PM Peak Hour	17:15	17:00			17:15
AM Pk Volume	94	58			134	PM Pk Volume	81	132			211
Pk Hr Factor	0.758	0.690			0.882	Pk Hr Factor	0.964	0.733			0.824
7 - 9 Volume	159	78	0	0	237	4 - 6 Volume	136	227	0	0	363
7 - 9 Peak Hour	07:15	08:00			07:30	4 - 6 Peak Hour	17:00	17:00			17:00
7 - 9 Pk Volume	94	53	0	0	134	4 - 6 Pk Volume	74	132	0	0	206
Pk Hr Factor	0.758	0.828	0.000	0.000	0.882	Pk Hr Factor	0.881	0.733	0.000	0.000	0.805

Prepared by NDS/ATD

VOLUME

Armstrong Ave S/O Tesla Ave

Day: Thursday
Date: 10/11/2018

City: Los Angeles
Project #: CA18_5667_004

DAILY TOTALS	NB	SB	EB	WB	Total
	1,477	1,154	0	0	2,631

AM Period	NB		SB		EB	WB	TOTAL	
00:00	2		1				3	
00:15	1		1				2	
00:30	1		1				2	
00:45	1	5	1	4			2	9
01:00	1		0				1	
01:15	1		2				3	
01:30	0		0				0	
01:45	0	2	0	2			0	4
02:00	0		0				0	
02:15	0		0				0	
02:30	0		1				1	
02:45	0		0	1			0	1
03:00	0		0				0	
03:15	0		0				0	
03:30	0		0				0	
03:45	0		0				0	
04:00	1		1				2	
04:15	0		1				1	
04:30	1		0				1	
04:45	0	2	1	3			1	5
05:00	1		1				2	
05:15	2		0				2	
05:30	3		0				3	
05:45	5	11	0	1			5	12
06:00	2		2				4	
06:15	4		5				9	
06:30	5		7				12	
06:45	8	19	3	17			11	36
07:00	22		10				32	
07:15	24		7				31	
07:30	40		12				52	
07:45	42	128	18	47			60	175
08:00	39		12				51	
08:15	21		11				32	
08:30	37		13				50	
08:45	49	146	24	60			73	206
09:00	34		13				47	
09:15	29		14				43	
09:30	26		11				37	
09:45	24	113	17	55			41	168
10:00	22		12				34	
10:15	19		18				37	
10:30	23		10				33	
10:45	16	80	15	55			31	135
11:00	25		11				36	
11:15	17		16				33	
11:30	12		15				27	
11:45	16	70	18	60			34	130
TOTALS		576		305				881
SPLIT %		65.4%		34.6%				33.5%

PM Period	NB		SB		EB	WB	TOTAL	
12:00	23		15				38	
12:15	19		16				35	
12:30	10		21				31	
12:45	15	67	13	65			28	132
13:00	17		24				41	
13:15	27		13				40	
13:30	13		19				32	
13:45	21	78	23	79			44	157
14:00	20		27				47	
14:15	30		22				52	
14:30	15		20				35	
14:45	16	81	19	88			35	169
15:00	18		20				38	
15:15	23		22				45	
15:30	23		28				51	
15:45	27	91	26	96			53	187
16:00	34		31				65	
16:15	28		29				57	
16:30	31		30				61	
16:45	35	128	40	130			75	258
17:00	41		37				78	
17:15	47		40				87	
17:30	37		33				70	
17:45	27	152	26	136			53	288
18:00	29		30				59	
18:15	37		24				61	
18:30	36		25				61	
18:45	23	125	20	99			43	224
19:00	31		16				47	
19:15	22		15				37	
19:30	20		13				33	
19:45	12	85	21	65			33	150
20:00	12		13				25	
20:15	13		8				21	
20:30	4		12				16	
20:45	2	31	11	44			13	75
21:00	6		9				15	
21:15	8		7				15	
21:30	4		13				17	
21:45	11	29	5	34			16	63
22:00	2		3				5	
22:15	7		2				9	
22:30	5		2				7	
22:45	10	24	2	9			12	33
23:00	1		0				1	
23:15	3		1				4	
23:30	3		2				5	
23:45	3	10	1	4			4	14
TOTALS		901		849				1750
SPLIT %		51.5%		48.5%				66.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	1,477	1,154	0	0	2,631

AM Peak Hour	08:30	11:45			08:30	PM Peak Hour	16:45	16:45			16:45
AM Pk Volume	149	70			213	PM Pk Volume	160	150			310
Pk Hr Factor	0.760	0.833			0.729	Pk Hr Factor	0.851	0.938			0.891
7 - 9 Volume	274	107	0	0	381	4 - 6 Volume	280	266	0	0	546
7 - 9 Peak Hour	08:00	08:00			08:00	4 - 6 Peak Hour	16:45	16:45			16:45
7 - 9 Pk Volume	146	60	0	0	206	4 - 6 Pk Volume	160	150	0	0	310
Pk Hr Factor	0.745	0.625	0.000	0.000	0.705	Pk Hr Factor	0.851	0.938	0.000	0.000	0.891