

G. Traffic and Parking Technical Memorandum



DATE April 25, 2019

TO Ana Gonzalez
Director, Planning and Development
Riverside Unified School District
3070 Washington Street
Riverside, CA 92504

FROM Fernando Sotelo, PE, PTP
Senior Associate

SUBJECT Traffic and Parking Technical Memorandum for the Longfellow Elementary School
Expansion Project

PROJECT NUMBER RIV-25

Introduction and Project Description

The Riverside Unified School District plans to renovate and expand the existing school by acquiring two residential properties adjacent to the school, 2210 and 2226 Seventh Street. Longfellow Elementary School is at 3610 Eucalyptus Avenue in the City of Riverside, CA 92507 (see Figure 1, *Local Vicinity*). This technical memorandum assesses potential traffic impacts to the circulation system associated with the proposed expansion.

The project site is in a residential area and surrounded by residences to the west, east, south, and north (see Figure 2, *Aerial Photograph*). The proposed improvements include: a new drop-off location, parking lot, and access driveway off Franklin Avenue, shown on Figure 3, *Site Plan*. The school currently has an enrollment of about 741 students in grades K to 6. The project would modernize buildings and provide new facilities—such as additional parking spaces and new buildings. However, the project would not result in an increase in student capacity. The overall construction would be completed by the summer of 2021.

This Technical Memorandum analyzes site access and the transportation network in the vicinity of the school; describes student drop-off and pick-up procedures; provides a detailed review of the project components that would affect traffic and parking; identifies issues related to access, traffic congestion, and pedestrian/bike travel; and evaluates parking conditions. Existing traffic conditions are used as the “baseline” for the analysis and to evaluate the potential impacts of the proposed project. The overall purpose of this report is to inform decision makers and the general public whether the proposed project would result in any significant impacts.

Methodology

This section of the report sets forth guidelines for analyzing traffic impacts from projects on the roadway network and thresholds of significance. The methodologies described are generally consistent with City of Riverside requirements for the preparation of traffic impact analyses.

DEFINITION OF LEVEL OF SERVICE

Roadway capacity is generally limited by the ability to move vehicles through intersections. A level of service (LOS) is a standard performance measurement to describe the operating characteristics of a street

system in terms of the level of congestion or delay experienced by motorists. Service levels range from A through F, which relate to traffic conditions from best (uncongested, free-flowing conditions) to worst (total breakdown with stop-and-go operation).

The methodology used to assess the operation of a signalized intersection is based on the Highway Capacity Manual (HCM). The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions. The peak hours selected for analysis are the highest volumes that occur in four consecutive 15-minute periods from 7 to 9 AM and from 2 to 4 PM on weekdays. The HCM 6th edition signalized intersection methodology presents LOS in terms of control delay (in seconds per vehicle). Table 1 describes the level of service concept and the operating conditions expected under each level of service for signalized and unsignalized intersections. The software PTV Vistro 7 was used to determine the LOS at the study area intersections.

Table 1 Intersection Level of Service Descriptions

LOS	Description	Average Delay Per Vehicle (seconds)	
		Signalized	Unsignalized
A	Free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream.	0 to 10.00	0 to 10.00
B	Reasonable unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted, and control delay at the boundary intersections is not significant.	10.01 to 20.00	10.01 to 15.00
C	Stable operation. The ability to maneuver and change lanes at midsegment locations may be more restricted than at LOS B.	20.01 to 35.00	15.01 to 25.00
D	Less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speeds.	35.01 to 55.00	25.01 to 35.00
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections.	55.01 to 80.00	35.01 to 50.00
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing.	80.01 and up	50.01 and up

Source: Highway Capacity Manual, 6th edition, Transportation Research Board, 2016.

DETERMINATION OF IMPACTS

The City of Riverside General Plan Circulation Element includes LOS standards. According to Policy CCM-2.3, the City shall maintain LOS D or better on Arterial Streets whenever possible.

Signalized Intersections: According to the City of Riverside 2012 Traffic Impact Study Guidelines, an impact would occur at an intersection when project trips would cause:

- » an intersection to degrade from an acceptable LOS A to D to an unacceptable LOS E or F,
- » an increase in delay during the peak hour as follows:
 - LOS A/B by 10 or more seconds
 - LOS C by 8 or more seconds
 - LOS D by 5 or more seconds
 - LOS E by 2 or more seconds
 - LOS F by 1 or more seconds

Unsignalized Intersections: An impact is considered significant if the study determines if project traffic results in the intersection to go from LOS D to LOS E or worse and the peak hour traffic signal warrant for the intersection is met with the additional project traffic.

Existing Circulation and Parking Conditions

The key roadways in the vicinity of the school are Eucalyptus Avenue, Franklin Avenue, Seventh Street, Sixth Street, and University Avenue.

- » Eucalyptus Avenue is a two-lane north-south local street. Curbside parking and paved sidewalks are available on both sides. The curb on the east side of the street adjacent to the school property is designated as a loading zone.
- » Franklin Avenue is a two-lane north-south local street. Curbside parking and paved sidewalks are available on both sides. Adjacent to the school side, there is a posted signage for no parking on Monday to Friday from 7:50 to 8:20 AM.
- » Seventh Street is a two-lane east-west local street west of the school and a cul-de-sac east of the school. On both sides there are curbside parking and paved sidewalks. West of Franklin Avenue and on the northern portion of Mission Inn Avenue, parking is limited to 10 minutes.
- » Sixth Street is a two-lane east-west local street. Paved sidewalks and curbside parking are available on both sides, with the exception of no curbside parking west of Eucalyptus Avenue and northern portion of Sixth Street (adjacent to the staff parking lot). This roadway runs along the north side of the school.
- » University Avenue is a four-lane divided roadway that passes about 150 feet south of the campus. No on-street parking is permitted. There are paved sidewalks and striped (Class II) bicycle lanes on each side of the street.

PARKING

The school currently has two parking lots for teachers and staff. Curbside parking is permitted on public streets in the vicinity of the school, including: both sides of Eucalyptus Avenue, Franklin Avenue, Sixth Street, and Mission Inn Avenue. During a site visit at approximately 8:00 AM, vehicles that parked on Eucalyptus Avenue, Franklin Avenue, Sixth Street, and Mission Inn Avenue belonged to parents, staff members, or residents.

PUBLIC TRANSIT

The Riverside Transit Authority (RTA) provides public transit bus service to the City of Riverside, including the project vicinity. Table 2 shows nearby RTA routes.

Table 2 Public Transit Routes near the Project Site

Route	General Direction of Travel	Operation		
		Roadways near Project Site	Days per week	Frequency, weekday peak hours, minutes
1	East-West from Riverside to Corona	University Avenue	7	15
10	East-west in Riverside	Mission Inn Avenue, Eucalyptus Avenue	7	70
14	North-South, Loma Linda to Riverside	University Avenue	7	75
22	Northwest-Southeast, Riverside to Perris	University Avenue	7	40
204	East-West, Riverside to Montclair (in San Bernardino County)	University Avenue	Mon-Fri	Approx. 60
Gold Line	East-West from Riverside to Corona	University Avenue	Mon-Fri	15

Source: RTA 2019.

VEHICULAR CIRCULATION

PlaceWorks reviewed the current traffic and parking operations as well as pedestrian activities during student drop-off in the morning on Tuesday, November 13, 2018, between 7:55 and 8:40 AM. The following observations relate to vehicular circulation, parking, and pedestrian activity.

The school starts at 8:20 AM, and the afternoon dismissal is at 2:40 PM except on early dismissal days on Wednesdays. There are two designated passenger/student loading areas. One is in on the western frontage of the school on Eucalyptus Avenue, and other is one the eastern frontage of school on Franklin Avenue.

The western drop-off/pick-up on Eucalyptus Avenue and adjacent to the school has a designated loading zone north of Mission Inn Avenue, extending for almost 210 feet and marked with white curbside marking. The posted sign states that it is a loading zone on Monday to Friday from 7:50 to 8:20 AM, Monday to Tuesday and Thursday to Friday from 2:30 to 3:00 PM, and Wednesday from 1:00 to 1:45 PM. Following the passenger loading zone is 100 feet of yellow curbside dedicated for a bus loading zone.

The eastern drop-off/pick-up on Franklin Avenue and adjacent to the school has a designated loading zone located south of Sixth Street, extending for almost 180 feet and marked with white curbside marking. The posted sign states it is a loading zone Monday to Friday from 7:50 to 8:20 AM. It was observed that parents also parked their cars on both sides of Eucalyptus Avenue and Franklin Avenue for a short time and walked their children to the school building.

Traffic counts were taken on Franklin Avenue at Seventh Street on Tuesday, November 27, 2018, while school was in session. The existing AM peak hour and PM student dismissal count worksheets and figures showing turn-movement volumes are provided in Attachment A. The intersection operations analysis results are summarized in Table 3. The study intersection of Franklin Avenue at Seventh Street currently operates at acceptable LOS A during the peak hours. LOS worksheets for existing conditions are provided in Attachment B.

Table 3 Existing Peak Hour Intersection Levels of Service

Intersection	AM Peak Hour		PM Peak Hour	
	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1. Franklin Avenue at Mission Inn Avenue	8.2	A	7.4	A

Notes: LOS calculation worksheets in Attachment B.
AM peak hour is from 7 to 9 AM and the PM peak hour from 2 to 4 PM.

FUTURE CONDITIONS INTERSECTION ANALYSIS

Figure 4, *Paving Plan*, shows the off-street parking lot, the drop-off area, and proposed circulation plan for the school. A two-lane loop driveway would guide student drop-off/pick-up circulation on a one-way southbound path from Franklin Avenue, entering at Seventh Street and exiting about 190 feet to south. A 40-space parking lot would provide additional guest and staff parking. As discussed above, the project would not result in an increase in student capacity. However, the proposed drop-off area would modify traffic patterns on Franklin Avenue because the new drop-off area would direct parents to drop off students in the proposed off-street location rather than at the curbside locations along Franklin Avenue. To identify potential issues with queuing and vehicular conflicts at the proposed egress driveway on Franklin Avenue south of Seventh Street, future traffic volumes and intersection levels of service and queueing calculations were performed. The future traffic volumes were predicted by reviewing existing traffic patterns and manually adjusting traffic to the proposed drop-off area. The intersection LOS with project are summarized in Table 4. Table 4 shows that the study intersections would continue to operate at acceptable LOS A during the peak hours. LOS worksheets for existing conditions are provided in Attachment B. Attachment C shows the manual adjustments to calculate future traffic with the project.

Table 4 Future Peak Hour Intersection LOS with Project

Intersection	AM Peak Hour		PM Peak Hour	
	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1. Franklin Avenue at Mission Inn Avenue	8.2	A	7.3	A
2. Franklin Avenue at Egress Driveway	9.0	A	8.8	A

Notes: LOS calculation worksheets in Attachment B.
AM peak hour is from 7 to 9 AM and the PM peak hour from 2 to 4 PM.

Signal warrants are a set of criteria used to evaluate the potential need for the installation of a traffic signal at an unsignalized or stop-controlled intersection. The methodology for the signal warrant analysis is in the 2014 California Manual on Uniform Traffic Control Devices. The manual states that if one or more of the criteria for signal warrants is met, an engineering study is required to evaluate other factors to determine if an intersection must be signalized. This analysis uses Warrant 3 criteria, which are based on peak hour traffic volumes. The signal warrant calculations are included in Attachment D. No unsignalized study intersections would meet the peak hour warrants with project traffic. Although the project would result in modified traffic on Franklin Avenue, the drop-off would mostly move off-street and improve traffic conditions. Impacts would be less than significant. According to the impact criteria provided on page 3, there would be no impacts to the study intersections and no mitigation would be required.

CRASH DATA

A 10-year crash history of roadways and intersections on the immediate vicinity of the school including Franklin Avenue, Sixth Street, Seventh Street, (January 2008 through December 2017) was obtained from the Transportation Injury Mapping System (TIMS) website to identify potential safety issues in the vicinity of the school. Crash variables (type, severity, etc.) were reviewed at in study area to assess if any potential crash patterns might be identifiable. In the last 10 years, all the reported collisions in the study area consisted of vehicle to vehicle, vehicle to bicycle, vehicle to pedestrian, and vehicle to object. The only reported collision at an intersection in the vicinity of the school occurred at the intersection of Franklin Avenue / University Avenue. The accident was a vehicle-to-vehicle rear-end collision on University Avenue in the westbound lanes due to unsafe speeds; it resulted in injuries but no deaths. No crashes have been reported on Franklin Avenue north of University Avenue. This accident occurred in September 2007 outside school hours. Other accidents occurred on University Avenue west and east of Franklin Avenue. The 10-year collision history in the area indicates that accidents are not frequent and are typically vehicle to vehicle and not related to school activity.

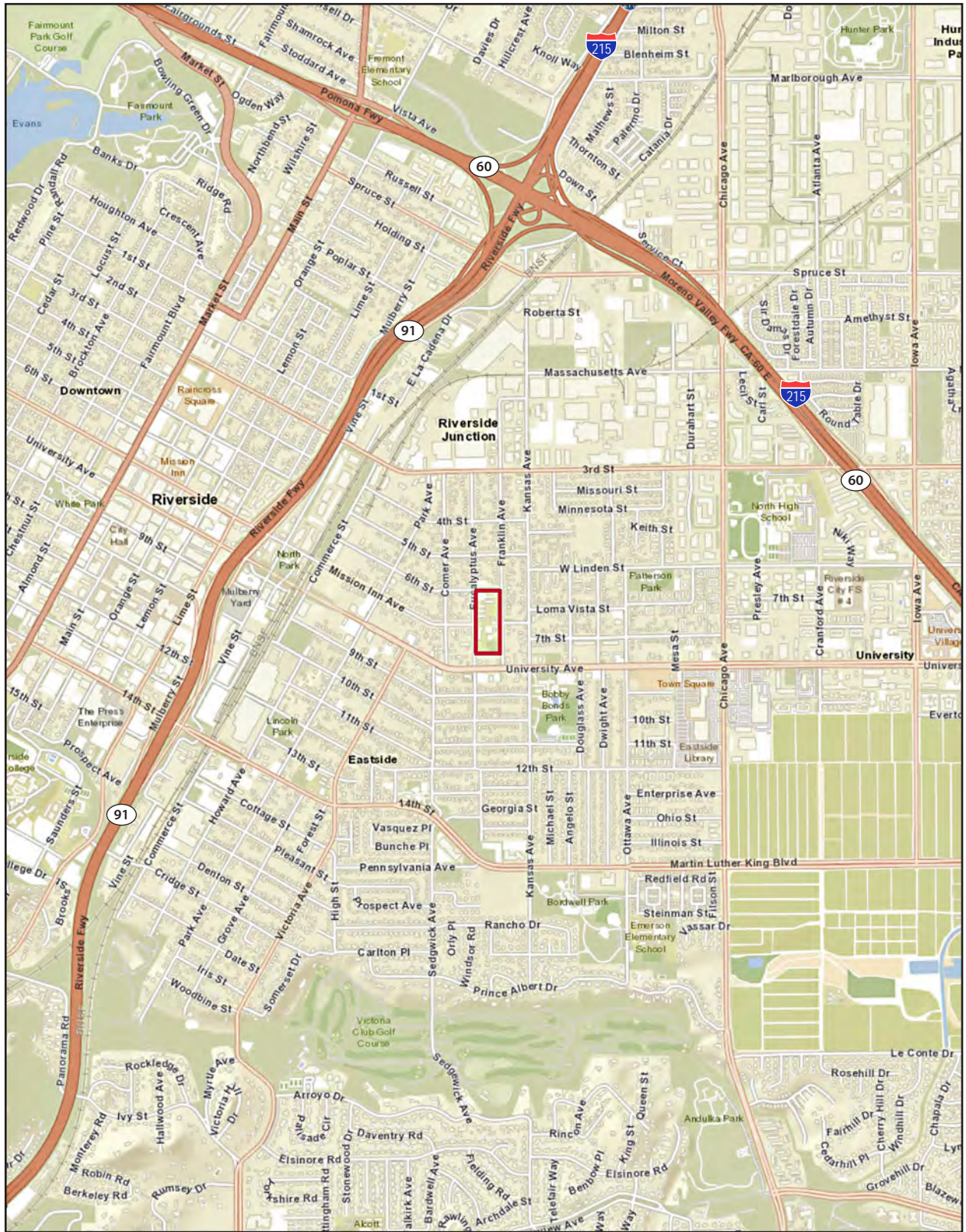
Conclusion and Recommendations

This memorandum evaluates potential impacts of the project-related reconfigured drop-off/pick-up zone. The new south parking lot would alter traffic patterns on Franklin Avenue because vehicles would enter the drop-off/pick-up area at the ingress driveway at the intersection of Franklin Avenue at Seventh Street and egress via a new driveway on Franklin Avenue approximately 190 feet to the south. No impacts were identified, and all intersections would continue to operate at acceptable LOS. The reconfigured drop-off/pick-up zone would allow more vehicles to queue on the school property while reducing student drop-off and vehicle maneuvers to park and stop to drop off students along curbs on public streets. Therefore, the modified drop-off area and parking lot would improve traffic conditions on Franklin Avenue. It is recommended that the parking be prohibited for a length of approximately 20 feet north and south along the curbside area immediately adjacent to the egress driveways. The prohibition should be placed at a minimum during the student drop-off and pick-up periods to allow better traffic flow and improve line of sight.

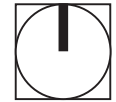
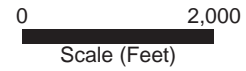
To ensure proper circulation and efficient use of the new parking lot and drop-off/pick-up areas, the school should educate staff and visitors about the use of the new lot and provide monitors to assist students getting in and out of vehicles and to ensure that vehicles pull forward at the drop-off area.

FIGURES

Figure 1 - Local Vicinity

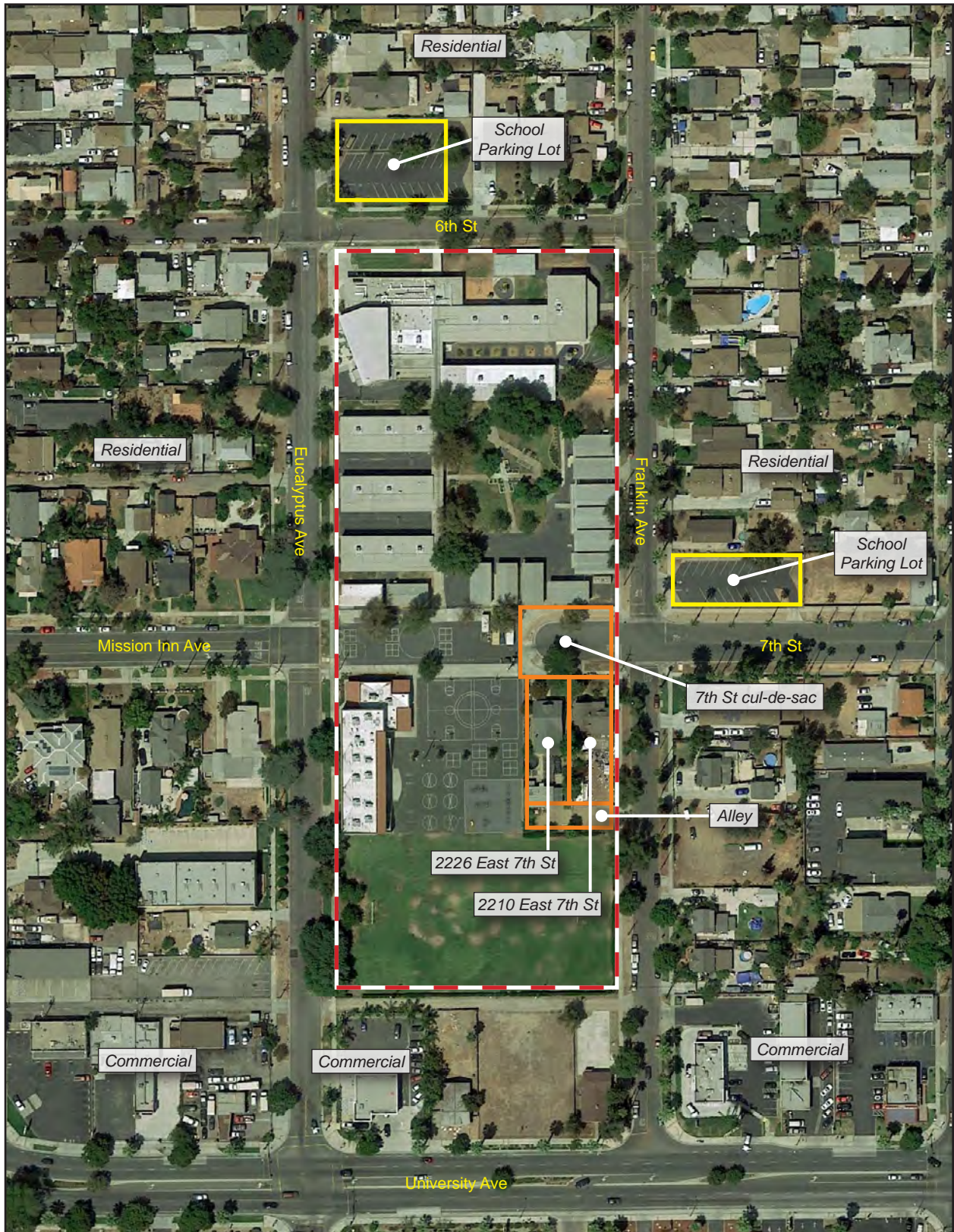


Project Boundary




Source: ESRI, 2018

Figure 2 - Aerial Photograph



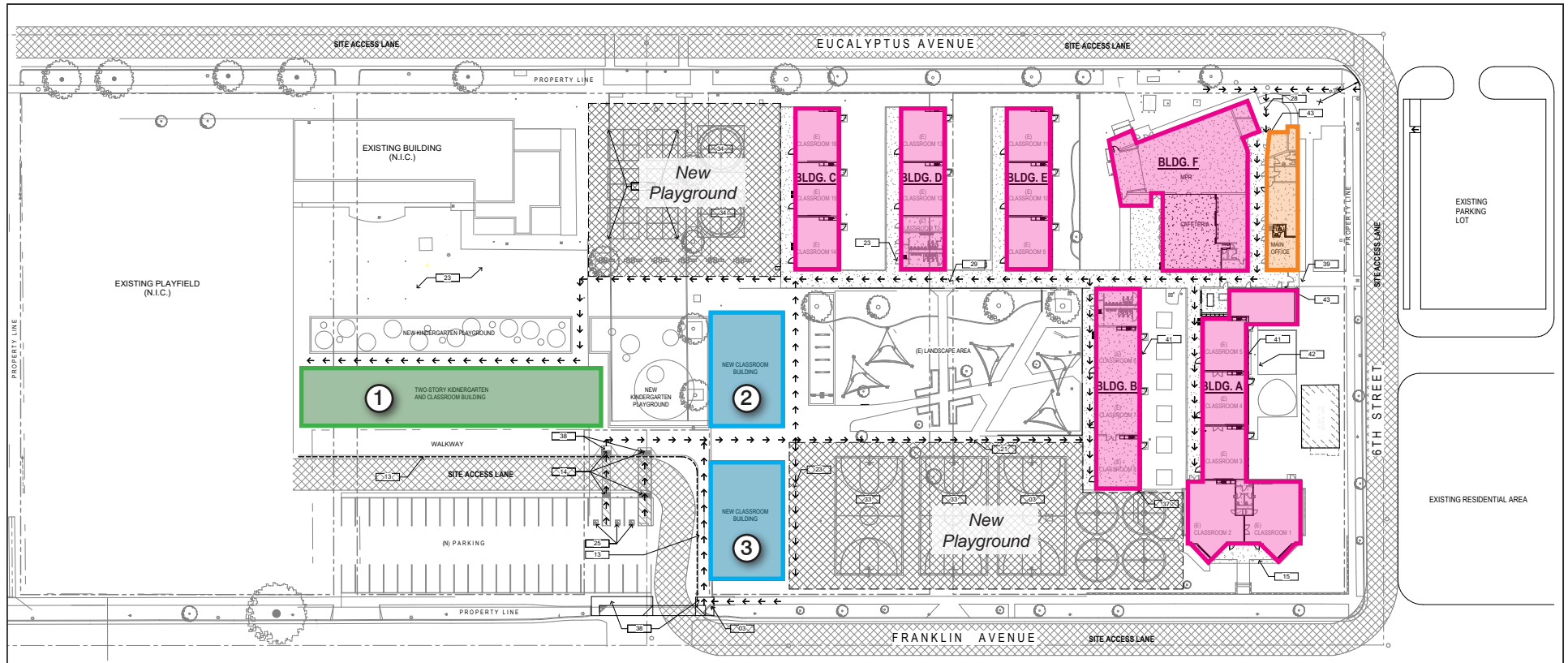
— Project Boundary School Expansion Site (Acquisition Properties)

0 200
Scale (Feet)



Source: Google Earth Pro, 2019

Figure 3 - Site Plan



① New 2-Story Classroom Building #1

② New 1-Story Classroom Building #2

Administration Building to be Converted to Parent Center/Classroom and Day Care

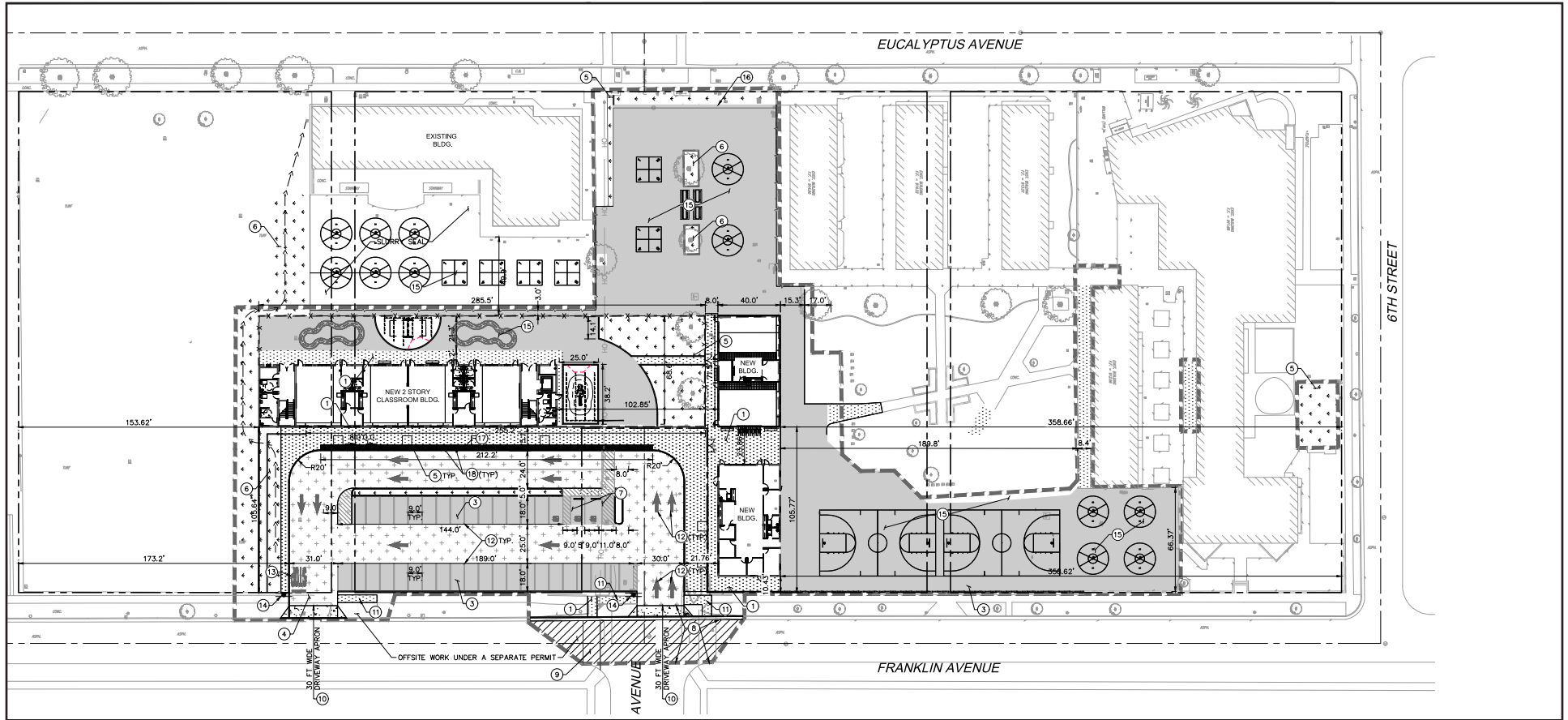
Buildings to be Renovated

③ New 1-Story Administration Building #3

0 70
Scale (Feet)



Figure 4 - Paving Plan



LEGEND

- PROPERTY LINE
- CENTER LINE
- EASEMENT OR SETBACK LINE
- SAWCUT AND MATCH EXISTING

PAVEMENT LEGEND

- STANDARD DUTY CONCRETE PAVEMENT
SEE DETAIL 2, SHEET C6.01
- HEAVY DUTY CONCRETE PAVEMENT
SEE DETAIL 2, SHEET C6.01
- STANDARD DUTY ASPHALT CONCRETE PAVEMENT
SEE DETAIL 2, SHEET C6.01



HEAVY DUTY ASPHALT CONCRETE PAVEMENT
SEE DETAIL 2, SHEET C6.01



FULL DEPTH AC REPLACEMENT
SEE DETAIL 2, SHEET C6.01



LANDSCAPE



PROPOSED BUILDING

0 70

Scale (Feet)



Source: DLR Group, 2019

ATTACHMENT A: Traffic Counts

National Data & Surveying Services

Intersection Turning Movement Count

Location: Franklin Ave & 7th Street
City: Riverside
Control: 4-Way Stop

Project ID: 18-06147-001
Date: 11/27/2018

Total

NS/EW Streets:	Franklin Ave				Franklin Ave				7th Street				7th Street				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	1	0	6	3	0	0	0	0	0	0	1	1	3	0	16
7:15 AM	0	2	1	0	4	1	0	0	1	1	0	0	4	0	1	0	15
7:30 AM	0	2	0	0	7	6	0	0	0	0	0	0	6	1	8	0	30
7:45 AM	1	8	0	0	4	2	0	0	0	0	0	0	4	1	12	1	33
8:00 AM	0	4	5	0	33	18	0	0	0	1	0	0	8	0	18	1	88
8:15 AM	0	3	2	0	25	18	0	1	0	0	0	0	3	0	7	0	59
8:30 AM	0	0	0	0	6	3	0	0	0	0	0	0	1	0	4	0	14
8:45 AM	0	2	0	0	2	4	0	0	0	0	0	0	2	0	2	0	12
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	1	22	9	0	87	55	0	1	1	2	0	0	29	3	55	2	267
	3.13%	68.75%	28.13%	0.00%	60.84%	38.46%	0.00%	0.70%	33.33%	66.67%	0.00%	0.00%	32.58%	3.37%	61.80%	2.25%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	1	17	7	0	69	44	0	1	0	1	0	0	21	2	45	2	210
PEAK HR FACTOR :	0.250	0.531	0.350	0.000	0.523	0.611	0.000	0.250	0.000	0.250	0.000	0.000	0.656	0.500	0.625	0.500	0.597
			0.694				0.559				0.250				0.648		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
2:00 PM	0	2	4	0	7	2	0	0	0	0	0	0	5	1	7	0	28
2:15 PM	0	4	2	0	5	3	1	0	0	0	0	0	4	0	5	0	24
2:30 PM	1	6	5	0	8	6	0	0	0	1	2	0	4	2	13	1	49
2:45 PM	0	1	4	0	16	10	0	0	0	2	0	0	5	0	10	0	48
3:00 PM	1	1	3	0	9	7	1	0	1	0	0	0	2	0	8	0	33
3:15 PM	0	2	1	0	7	3	0	1	0	0	0	0	3	0	6	0	23
3:30 PM	0	1	2	0	8	2	0	0	0	0	0	0	4	0	5	0	22
3:45 PM	0	4	5	0	2	2	0	0	0	2	0	0	6	0	2	0	23
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	2	21	26	0	62	35	2	1	1	5	2	0	33	3	56	1	250
	4.08%	42.86%	53.06%	0.00%	62.00%	35.00%	2.00%	1.00%	12.50%	62.50%	25.00%	0.00%	35.48%	3.23%	60.22%	1.08%	
PEAK HR :	02:15 PM - 03:15 PM																TOTAL
PEAK HR VOL :	2	12	14	0	38	26	2	0	1	3	2	0	15	2	36	1	154
PEAK HR FACTOR :	0.500	0.500	0.700	0.000	0.594	0.650	0.500	0.000	0.250	0.375	0.250	0.000	0.750	0.250	0.692	0.250	0.786
			0.583				0.635				0.500				0.675		

National Data & Surveying Services

Intersection Turning Movement Count

Location: Franklin Ave & 7th Street
City: Riverside
Control: 4-Way Stop

Project ID: 18-06147-001
Date: 11/27/2018

Bikes

NS/EW Streets:	Franklin Ave				Franklin Ave				7th Street				7th Street				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
PEAK HR :	07:30 AM - 08:30 AM												0.00% 0.00% 100.00% 0.00%				TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250
															0.250		0.250
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	2	0	0	0	0	0	0	0	4	0	0	0	6
PEAK HR :	02:15 PM - 03:15 PM				100.00% 0.00% 0.00% 0.00%								100.00% 0.00% 0.00% 0.00%				TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	3
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.375
															0.250		0.375

National Data & Surveying Services

Intersection Turning Movement Count

Location: Franklin Ave & 7th Street
City: Riverside

Project ID: 18-06147-001
Date: 11/27/2018

Pedestrians (Crosswalks)

NS/EW Streets:	Franklin Ave		Franklin Ave		7th Street		7th Street		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	1	0	0	0	1	0	1	3
7:15 AM	0	1	0	0	1	0	0	0	2
7:30 AM	1	6	0	0	0	0	0	1	8
7:45 AM	0	26	0	2	2	0	2	0	32
8:00 AM	22	64	2	5	0	2	8	4	107
8:15 AM	4	11	3	0	0	0	1	4	23
8:30 AM	2	0	0	0	0	0	0	0	2
8:45 AM	1	0	0	0	0	0	0	1	2
TOTAL VOLUMES :	EB 30	WB 109	EB 5	WB 7	NB 3	SB 3	NB 11	SB 11	TOTAL 179
APPROACH %'s :	21.58%	78.42%	41.67%	58.33%	50.00%	50.00%	50.00%	50.00%	
PEAK HR :	07:30 AM - 08:30 AM								TOTAL 170
PEAK HR VOL :	27	107	5	7	2	2	11	9	
PEAK HR FACTOR :	0.307	0.418	0.417	0.350	0.250	0.250	0.344	0.563	0.397
	0.390		0.429		0.500		0.417		

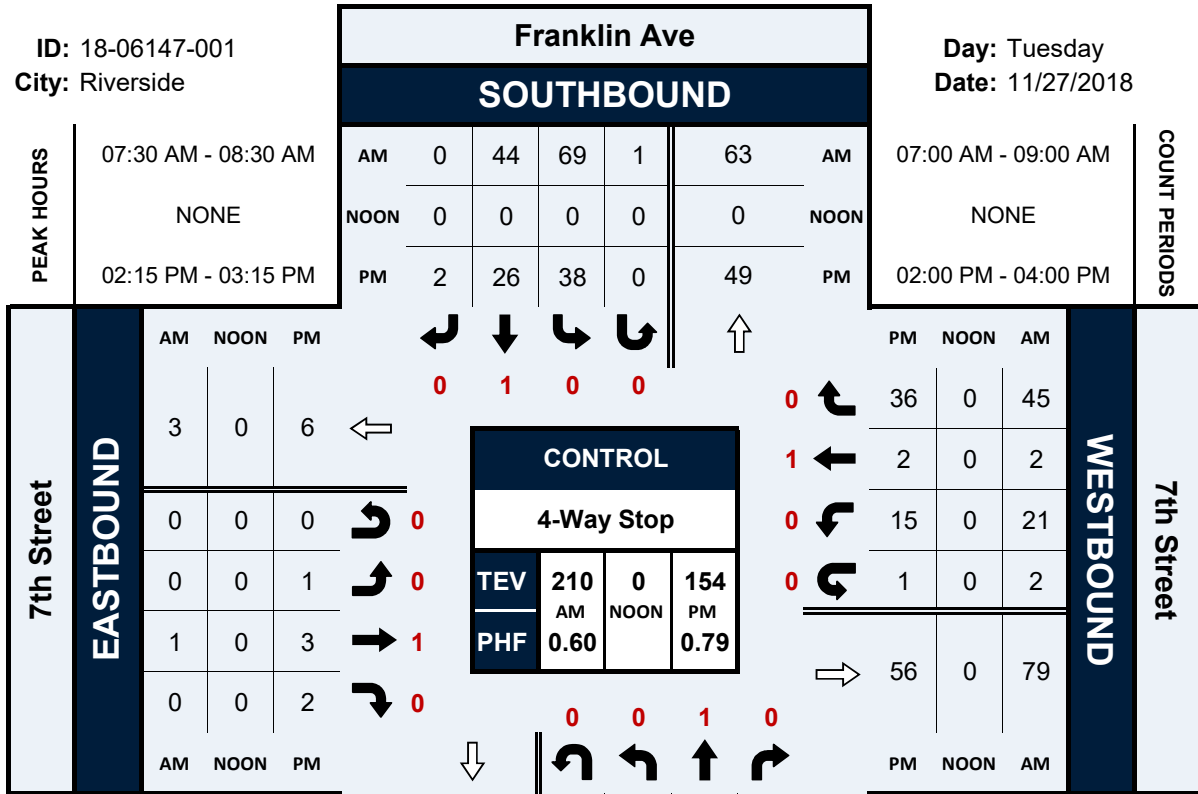
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
2:00 PM	2	1	0	1	0	1	0	0	5
2:15 PM	0	4	0	3	0	1	0	0	8
2:30 PM	79	26	17	8	2	0	9	5	146
2:45 PM	32	2	9	0	0	6	1	0	50
3:00 PM	5	1	0	0	0	1	2	2	11
3:15 PM	4	0	0	0	0	0	0	0	4
3:30 PM	1	0	0	0	0	0	0	0	1
3:45 PM	2	0	0	0	0	0	0	0	2
TOTAL VOLUMES :	EB 125	WB 34	EB 26	WB 12	NB 2	SB 9	NB 12	SB 7	TOTAL 227
APPROACH %'s :	78.62%	21.38%	68.42%	31.58%	18.18%	81.82%	63.16%	36.84%	
PEAK HR :	02:15 PM - 03:15 PM								TOTAL 215
PEAK HR VOL :	116	33	26	11	2	8	12	7	
PEAK HR FACTOR :	0.367	0.317	0.382	0.344	0.250	0.333	0.333	0.350	0.368
	0.355		0.370		0.417		0.339		

Franklin Ave & 7th Street

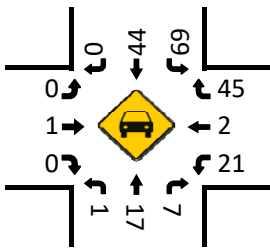
Peak Hour Turning Movement Count

ID: 18-06147-001
City: Riverside

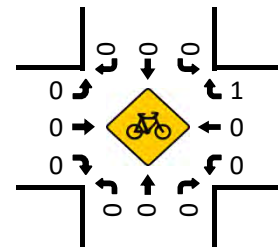
Day: Tuesday
Date: 11/27/2018



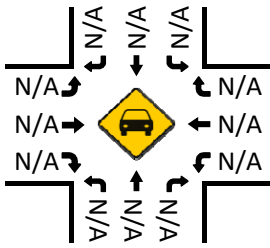
Total Vehicles (AM)



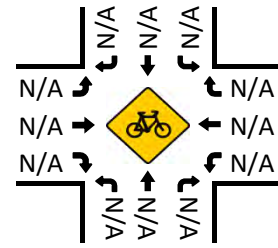
Bikes (AM)



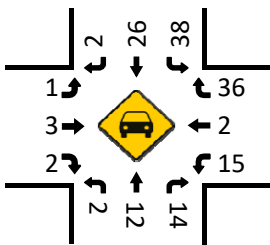
Total Vehicles (Noon)



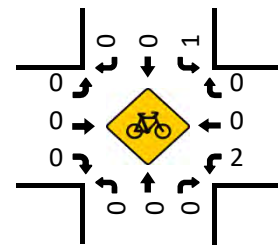
Bikes (NOON)



Total Vehicles (PM)



Bikes (PM)



VOLUME

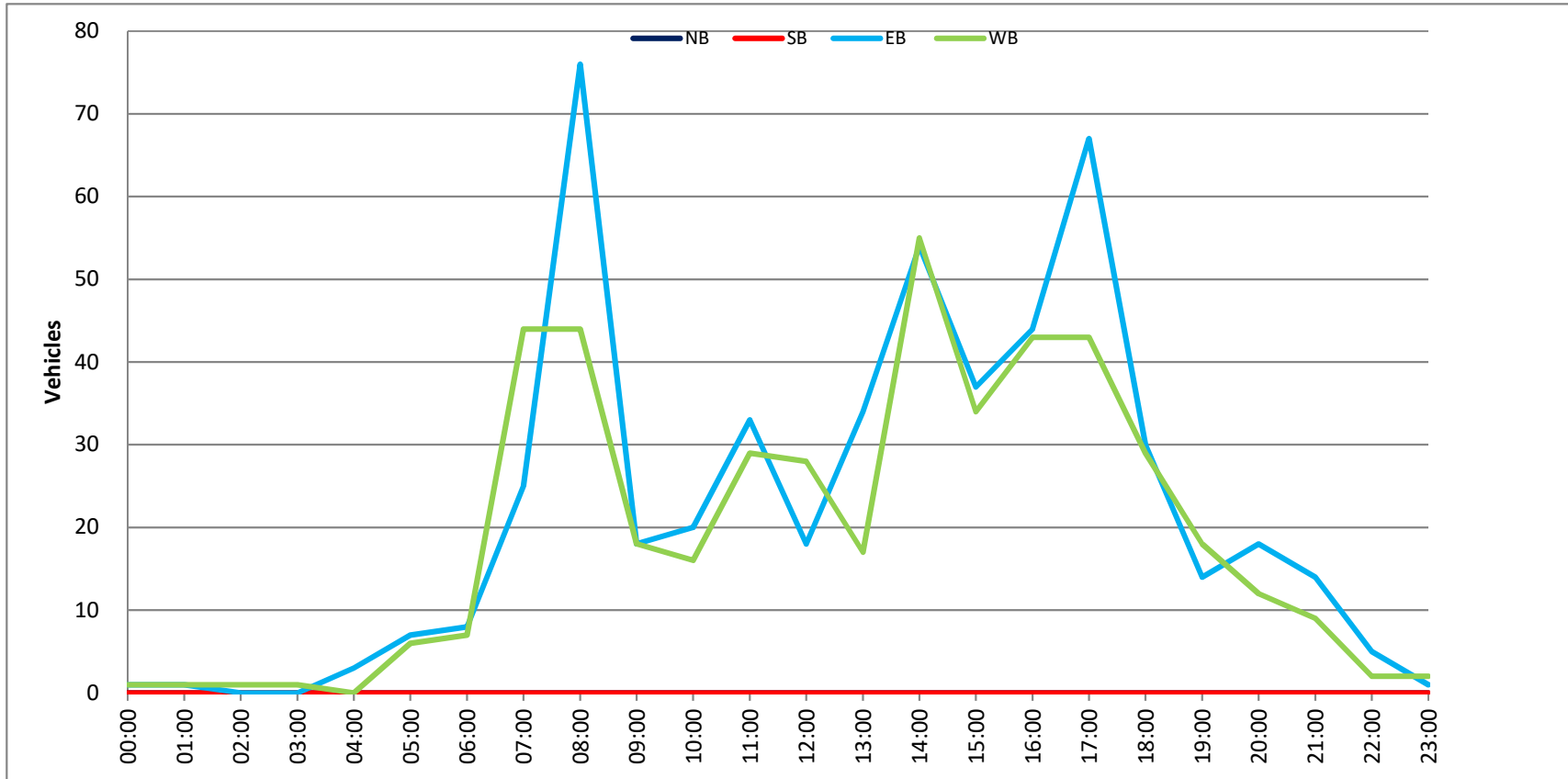
Mission Inn Ave Bet. Franklin Ave & Kansas Ave

Day: Tuesday
Date: 11/27/2018

City: Riverside
Project #: CA18_6149_001

DAILY TOTALS					NB	SB	EB	WB	Total		
					0	0	528	460	988		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00			0	0	0	12:00			8	13	21
00:15			0	1	1	12:15			3	8	11
00:30			1	0	1	12:30			1	4	5
00:45			0	1	0	12:45			6	18	24
01:00			0	0	0	13:00			6	5	11
01:15			1	1	2	13:15			11	2	13
01:30			0	0	0	13:30			12	5	17
01:45			0	1	0	13:45			5	34	39
02:00			0	0	0	14:00			12	12	24
02:15			0	0	0	14:15			7	9	16
02:30			0	0	0	14:30			14	20	34
02:45			0	1	1	14:45			21	54	75
03:00			0	0	0	15:00			11	10	21
03:15			0	1	1	15:15			8	9	17
03:30			0	0	0	15:30			9	7	16
03:45			0	0	0	15:45			9	37	46
04:00			0	0	0	16:00			13	12	25
04:15			1	0	1	16:15			13	9	22
04:30			1	0	1	16:30			13	14	27
04:45			1	3	0	16:45			5	44	49
05:00			0	0	0	17:00			12	12	24
05:15			0	2	2	17:15			11	11	22
05:30			4	1	5	17:30			28	13	41
05:45			3	7	3	17:45			16	67	83
06:00			0	0	0	18:00			11	8	19
06:15			2	1	3	18:15			5	4	9
06:30			1	1	2	18:30			7	5	12
06:45			5	8	5	18:45			7	30	37
07:00			7	5	12	19:00			6	1	7
07:15			6	6	12	19:15			3	6	9
07:30			8	15	23	19:30			4	5	9
07:45			4	25	18	19:45			1	14	15
08:00			39	26	65	20:00			4	4	8
08:15			28	10	38	20:15			5	4	9
08:30			7	5	12	20:30			5	2	7
08:45			2	76	3	20:45			4	18	22
09:00			6	5	11	21:00			5	4	9
09:15			6	6	12	21:15			5	1	6
09:30			2	5	7	21:30			1	2	3
09:45			4	18	2	21:45			3	14	17
10:00			4	3	7	22:00			1	0	1
10:15			2	4	6	22:15			2	1	3
10:30			7	8	15	22:30			2	1	3
10:45			7	20	1	22:45			0	5	5
11:00			10	6	16	23:00			0	1	1
11:15			6	7	13	23:15			1	0	1
11:30			5	9	14	23:30			0	0	0
11:45			12	33	7	23:45			0	1	1
TOTALS			192	168	360	TOTALS			336	292	628
SPLIT %			53.3%	46.7%	36.4%	SPLIT %			53.5%	46.5%	63.6%

DAILY TOTALS					NB	SB	EB	WB	Total		
					0	0	528	460	988		
AM Peak Hour			07:30	07:30	07:30	PM Peak Hour			17:00	14:00	17:00
AM Pk Volume			79	69	148	PM Pk Volume			67	55	110
Pk Hr Factor			0.506	0.663	0.569	Pk Hr Factor			0.598	0.688	0.671
7 - 9 Volume	0	0	101	88	189	4 - 6 Volume	0	0	111	86	197
7 - 9 Peak Hour			07:30	07:30	07:30	4 - 6 Peak Hour			17:00	16:30	17:00
7 - 9 Pk Volume	0	0	79	69	148	4 - 6 Pk Volume	0	0	67	45	110
Pk Hr Factor	0.000	0.000	0.506	0.663	0.569	Pk Hr Factor	0.000	0.000	0.598	0.804	0.671



VOLUME

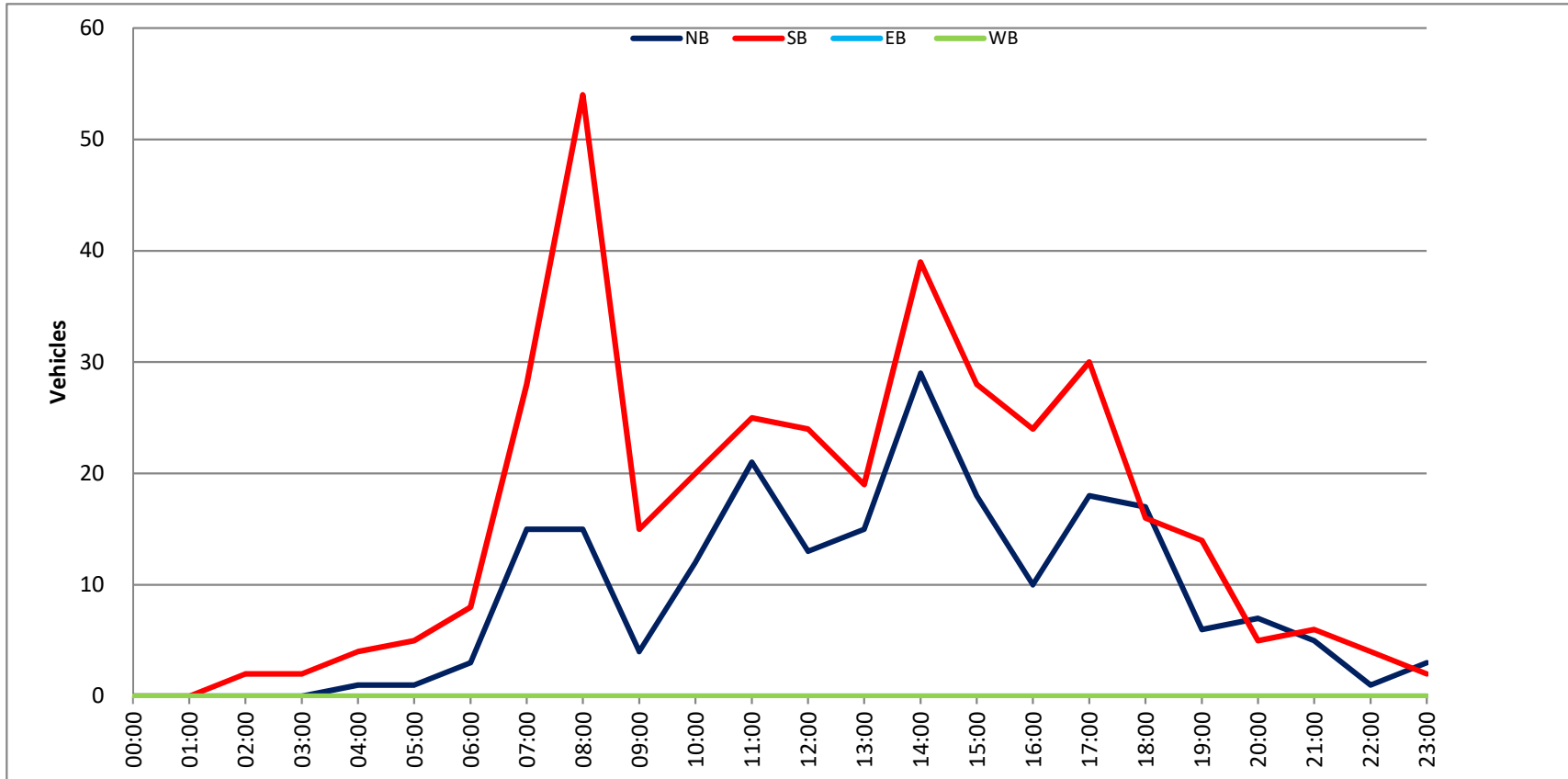
Franklin Ave S/O Mission Inn Ave

Day: Tuesday
Date: 11/27/2018

City: Riverside
Project #: CA18_6149_002

DAILY TOTALS					NB	SB	EB	WB	Total		
					214	374	0	0	588		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	0	0			0	12:00	3	7			10
00:15	0	0			0	12:15	3	4			7
00:30	0	0			0	12:30	4	5			9
00:45	0	0			0	12:45	3	13	8	24	11
01:00	0	0			0	13:00	3	2			5
01:15	0	0			0	13:15	3	5			8
01:30	0	0			0	13:30	5	8			13
01:45	0	0			0	13:45	4	15	4	19	8
02:00	0	1			1	14:00	5	6			11
02:15	0	0			0	14:15	7	7			14
02:30	0	1			1	14:30	12	9			21
02:45	0	0	2		0	14:45	5	29	17	39	22
03:00	0	0			0	15:00	5	9			14
03:15	0	0			0	15:15	3	4			7
03:30	0	1			1	15:30	2	7			9
03:45	0	1	2		1	15:45	8	18	8	28	16
04:00	0	0			0	16:00	3	5			8
04:15	0	0			0	16:15	2	6			8
04:30	1	3			4	16:30	4	10			14
04:45	0	1	1	4	1	16:45	1	10	3	24	4
05:00	0	1			1	17:00	2	6			8
05:15	1	0			1	17:15	5	9			14
05:30	0	4			4	17:30	7	7			14
05:45	0	1	0	5	0	17:45	4	18	8	30	12
06:00	0	3			3	18:00	8	5			13
06:15	0	1			1	18:15	4	3			7
06:30	1	0			1	18:30	2	0			2
06:45	2	3	4	8	6	18:45	3	17	8	16	11
07:00	2	4			6	19:00	1	3			4
07:15	3	4			7	19:15	3	2			5
07:30	2	12			14	19:30	2	6			8
07:45	8	15	8	28	16	19:45	0	6	3	14	3
08:00	9	25			34	20:00	1	1			2
08:15	4	20			24	20:15	3	0			3
08:30	0	4			4	20:30	1	1			2
08:45	2	15	5	54	7	20:45	2	7	3	5	5
09:00	1	5			6	21:00	3	1			4
09:15	0	2			2	21:15	0	2			2
09:30	2	3			5	21:30	1	2			3
09:45	1	4	5	15	6	21:45	1	5	1	6	2
10:00	0	9			9	22:00	0	1			1
10:15	5	1			6	22:15	0	0			0
10:30	3	3			6	22:30	0	1			1
10:45	4	12	7	20	11	22:45	1	1	2	4	3
11:00	6	8			14	23:00	0	2			2
11:15	6	3			9	23:15	2	0			2
11:30	7	5			12	23:30	0	0			0
11:45	2	21	9	25	11	23:45	1	3	0	2	1
TOTALS	72	163			235	TOTALS	142	211			353
SPLIT %	30.6%	69.4%			40.0%	SPLIT %	40.2%	59.8%			60.0%

DAILY TOTALS					NB	SB	EB	WB	Total
					214	374	0	0	588
AM Peak Hour	07:30	07:30			07:30	PM Peak Hour	14:00	14:15	14:15
AM Pk Volume	23	65			88	PM Pk Volume	29	42	71
Pk Hr Factor	0.639	0.650			0.647	Pk Hr Factor	0.604	0.618	0.807
7 - 9 Volume	30	82	0	0	112	4 - 6 Volume	28	54	82
7 - 9 Peak Hour	07:30	07:30			07:30	4 - 6 Peak Hour	17:00	17:00	17:00
7 - 9 Pk Volume	23	65	0	0	88	4 - 6 Pk Volume	18	30	48
Pk Hr Factor	0.639	0.650	0.000	0.000	0.647	Pk Hr Factor	0.643	0.833	0.857



ATTACHMENT B: LOS Worksheets

Intersection Level Of Service Report
Intersection 1: Franklin Avenue at Seventh Street

Control Type:	All-way stop	Delay (sec / veh):	8.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.230

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	1	17	7	70	44	0	0	1	0	23	2	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	17	7	70	44	0	0	1	0	23	2	45
Peak Hour Factor	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	3	29	18	0	0	0	0	10	1	19
Total Analysis Volume [veh/h]	2	28	12	117	73	0	0	2	0	38	3	75
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

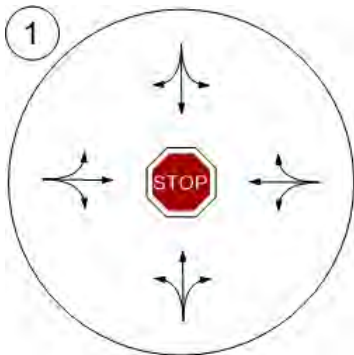
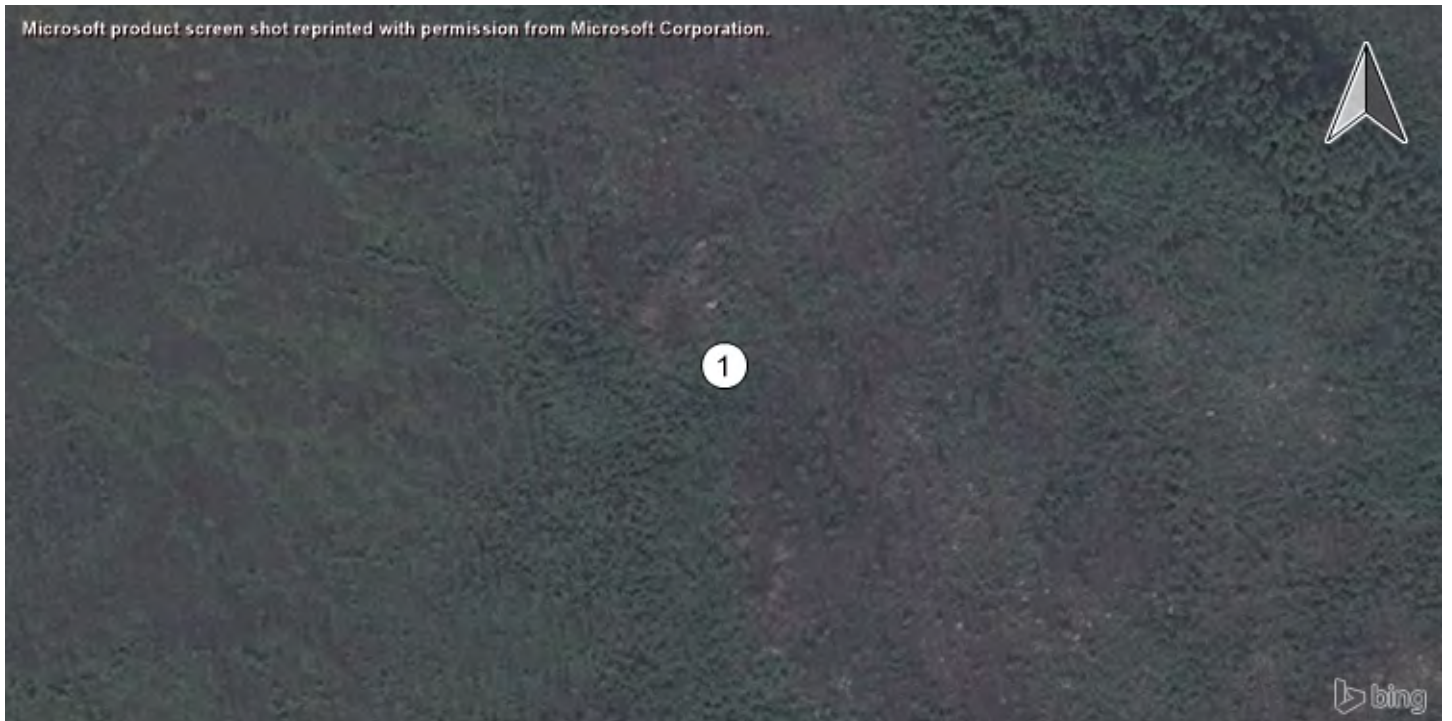
Capacity per Entry Lane [veh/h]	850	825	783	868
Degree of Utilization, x	0.05	0.23	0.00	0.13

Movement, Approach, & Intersection Results

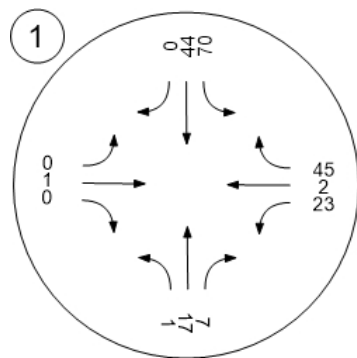
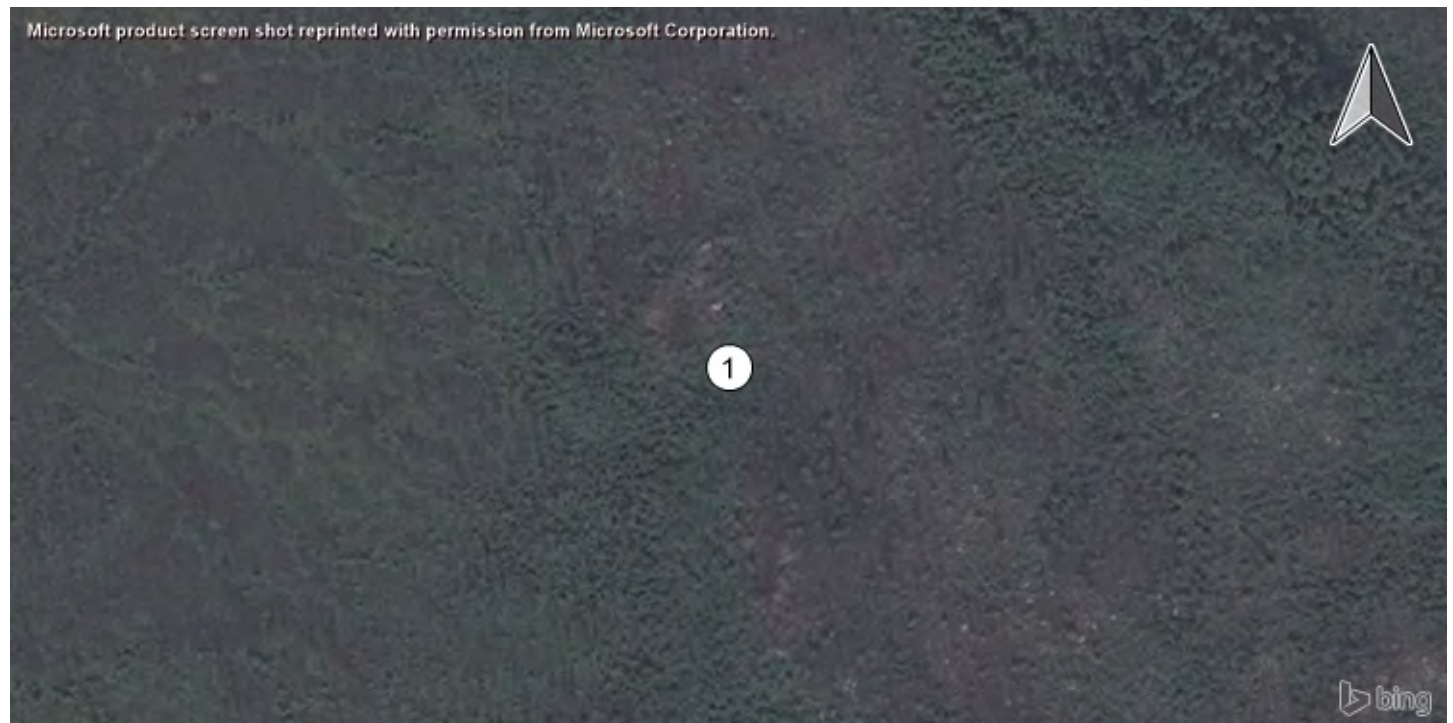
95th-Percentile Queue Length [veh]	0.16	0.89	0.01	0.46
95th-Percentile Queue Length [ft]	3.90	22.19	0.19	11.51
Approach Delay [s/veh]	7.46	8.66	7.61	7.78
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.22			
Intersection LOS	A			

Lane Configuration and Traffic Control

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Traffic Volume - Future Total Volume



Intersection Level Of Service Report
Intersection 1: Franklin Avenue at Seventh Street

Control Type:	All-way stop	Delay (sec / veh):	7.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.098

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	2	12	14	38	26	2	1	3	2	16	2	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	12	14	38	26	2	1	3	2	16	2	36
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	4	4	12	8	1	0	1	1	5	1	11
Total Analysis Volume [veh/h]	3	15	18	48	33	3	1	4	3	20	3	46
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

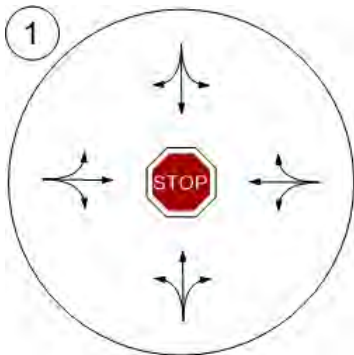
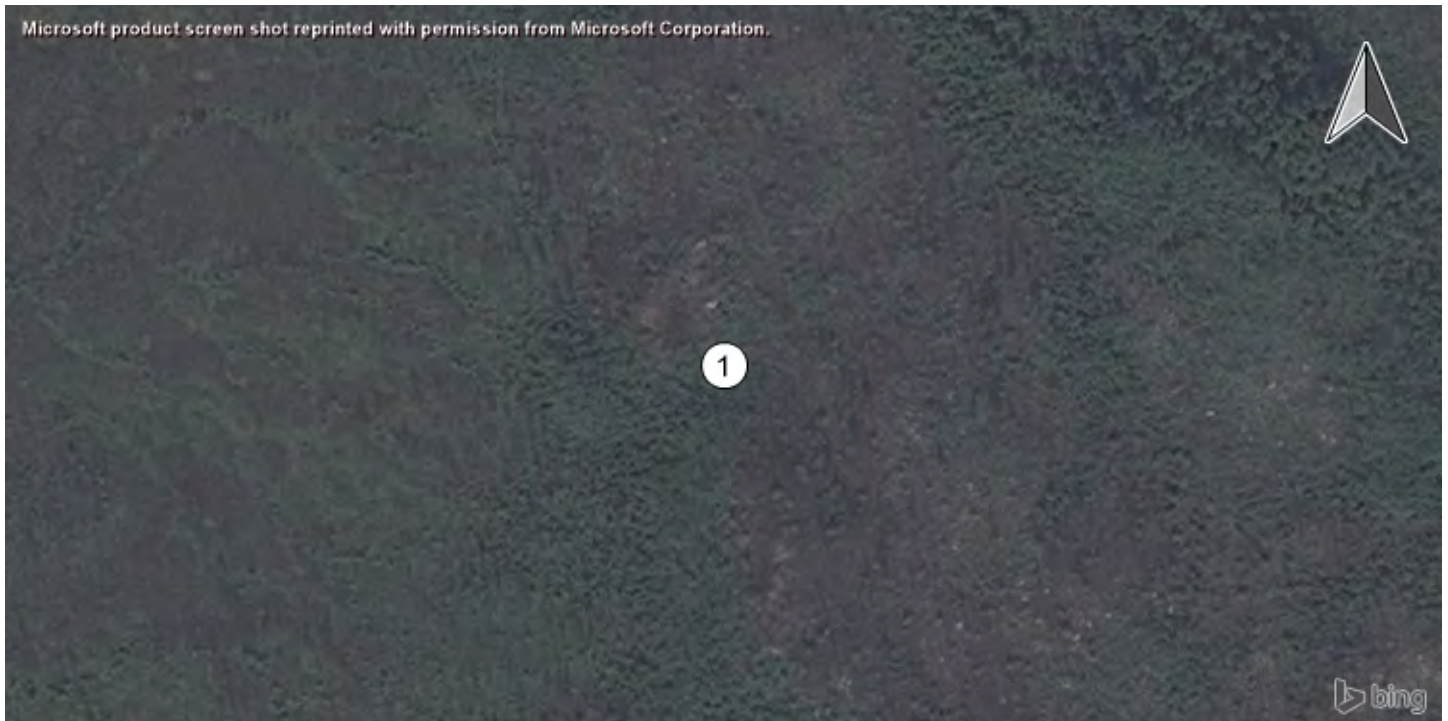
Capacity per Entry Lane [veh/h]	925	854	887	933
Degree of Utilization, x	0.04	0.10	0.01	0.07

Movement, Approach, & Intersection Results

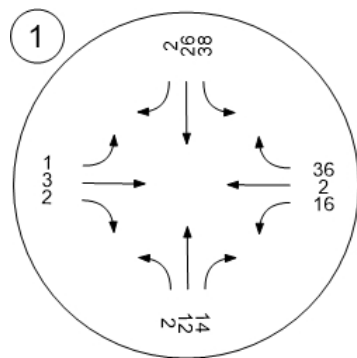
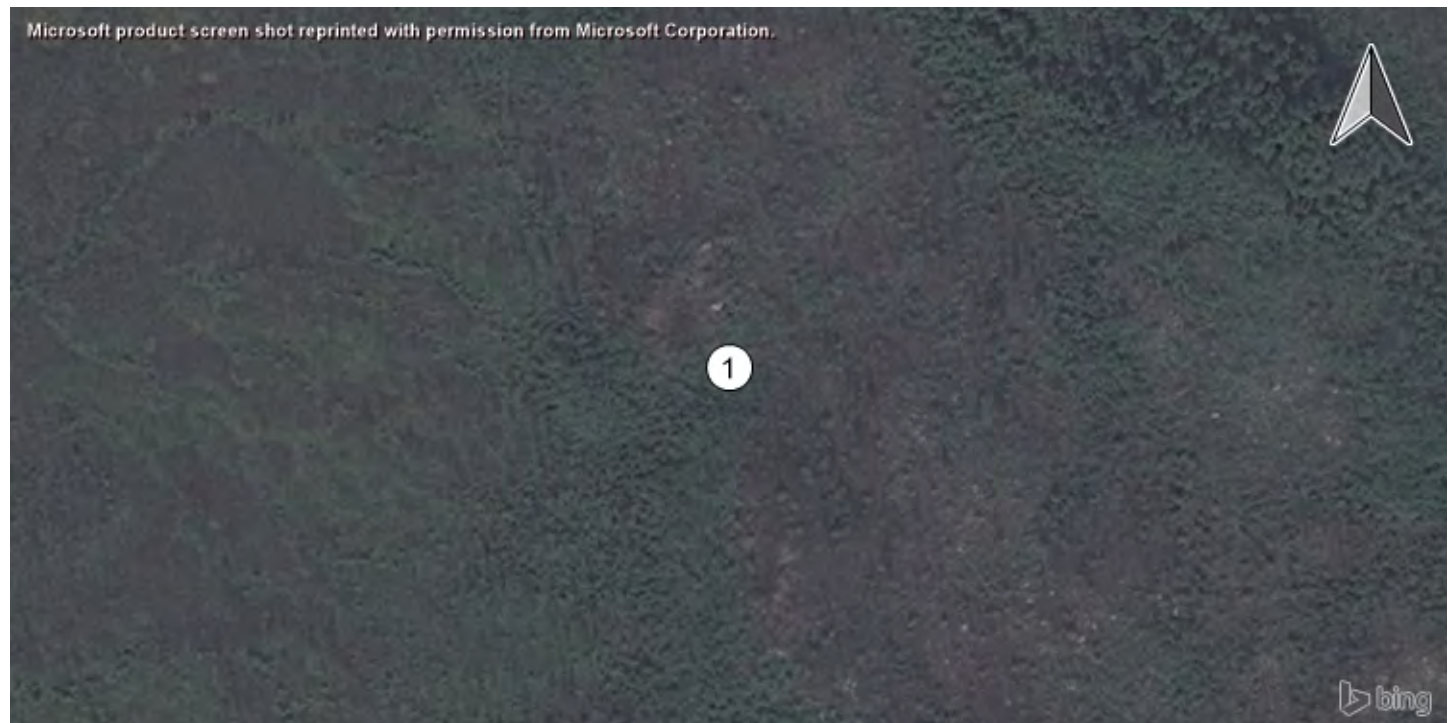
95th-Percentile Queue Length [veh]	0.12	0.33	0.03	0.24
95th-Percentile Queue Length [ft]	3.03	8.16	0.68	5.98
Approach Delay [s/veh]	7.05	7.68	7.10	7.17
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.36			
Intersection LOS	A			

Lane Configuration and Traffic Control

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Traffic Volume - Future Total Volume



Intersection Level Of Service Report
Intersection 1: Franklin Avenue at Seventh Street

Control Type:	All-way stop	Delay (sec / veh):	8.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.261

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	25	49	61	1	0	113	2	23	45	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	49	61	1	0	113	2	23	45	0	0	0
Peak Hour Factor	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	20	25	0	0	47	1	10	19	0	0	0
Total Analysis Volume [veh/h]	42	82	102	2	0	188	3	38	75	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	866	936	817	728
Degree of Utilization, x	0.26	0.20	0.14	0.00

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.05	0.76	0.49	0.00
95th-Percentile Queue Length [ft]	26.14	18.96	12.34	0.00
Approach Delay [s/veh]	8.62	7.83	8.13	0.00
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.23			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 3: Franklin @ Egress Driveway

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.142

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach						
Lane Configuration	↰		↱		↰↱	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	0	25	0	0	110	51
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	25	0	0	110	51
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	8	0	0	35	16
Total Analysis Volume [veh/h]	0	32	0	0	139	65
Pedestrian Volume [ped/h]	0		0		0	

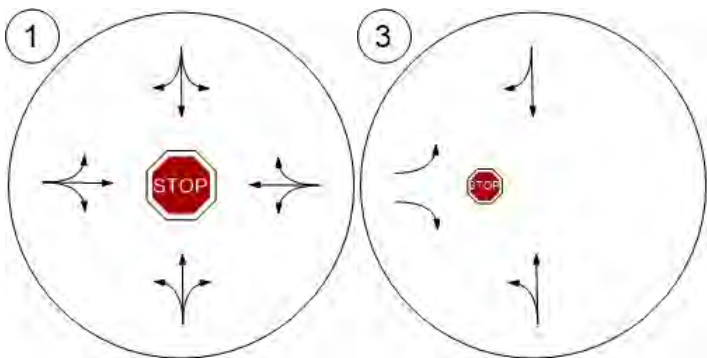
Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

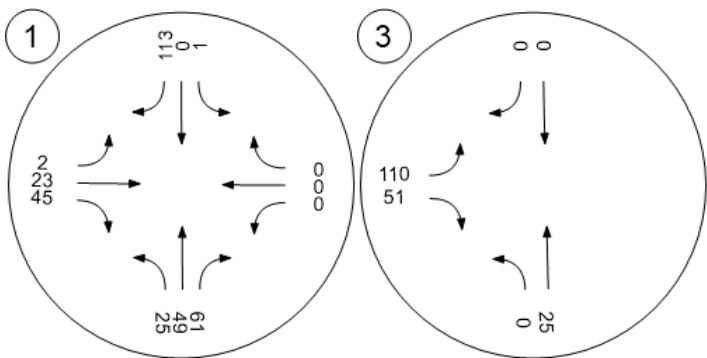
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.14	0.06
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	0.00	9.27	8.53
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.49	0.19
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	12.31	4.77
d_A, Approach Delay [s/veh]	0.00		0.00		9.03	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	7.81					
Intersection LOS	A					

Lane Configuration and Traffic Control



Traffic Volume - Future Total Volume



Intersection Level Of Service Report
Intersection 1: Franklin Avenue at Seventh Street

Control Type:	All-way stop	Delay (sec / veh):	7.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.143

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	28	35	40	0	0	66	0	0	0	1	17	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	35	40	0	0	66	0	0	0	1	17	36
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	11	13	0	0	21	0	0	0	0	5	11
Total Analysis Volume [veh/h]	35	44	51	0	0	84	0	0	0	1	22	46
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	907	1000	813	908
Degree of Utilization, x	0.14	0.08	0.00	0.08

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.50	0.27	0.00	0.25
95th-Percentile Queue Length [ft]	12.49	6.86	0.00	6.15
Approach Delay [s/veh]	7.63	6.93	0.00	7.29
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.34			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 3: Franklin @ Egress Driveway

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.080

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach						
Lane Configuration	↰		↱		↰↱	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	0	28	0	0	46	35
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	28	0	0	46	35
Peak Hour Factor	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	12	0	0	19	15
Total Analysis Volume [veh/h]	0	47	0	0	77	58
Pedestrian Volume [ped/h]	0		0		0	

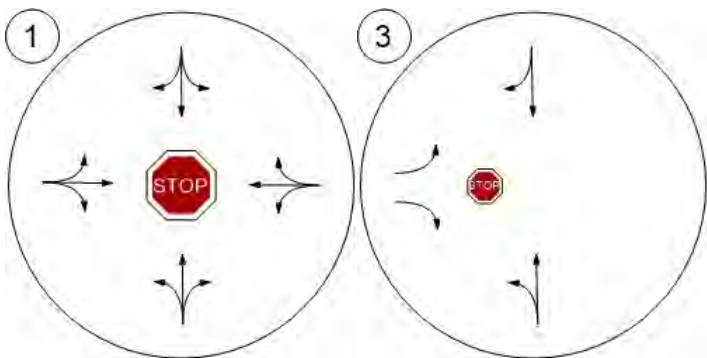
Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

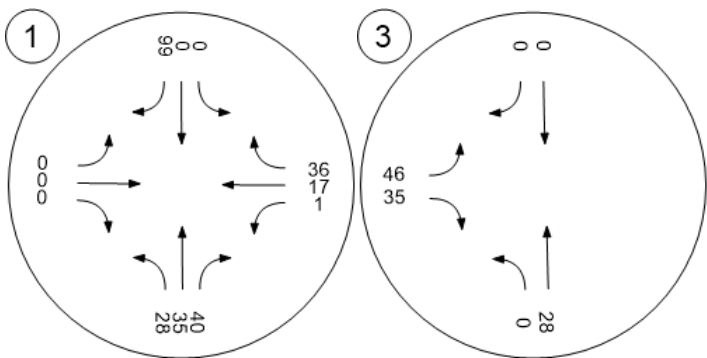
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.08	0.05
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	0.00	9.06	8.51
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.26	0.17
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	6.50	4.23
d_A, Approach Delay [s/veh]	0.00		0.00		8.82	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.55					
Intersection LOS	A					

Lane Configuration and Traffic Control



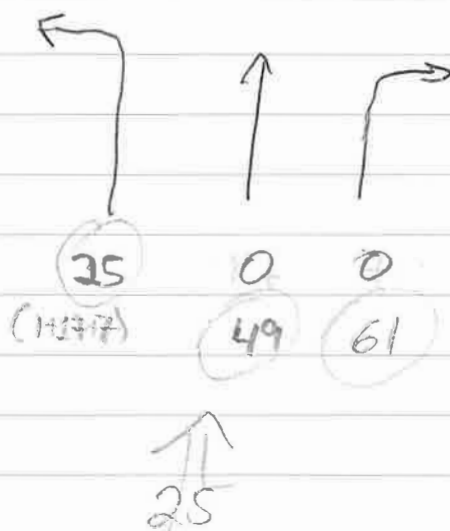
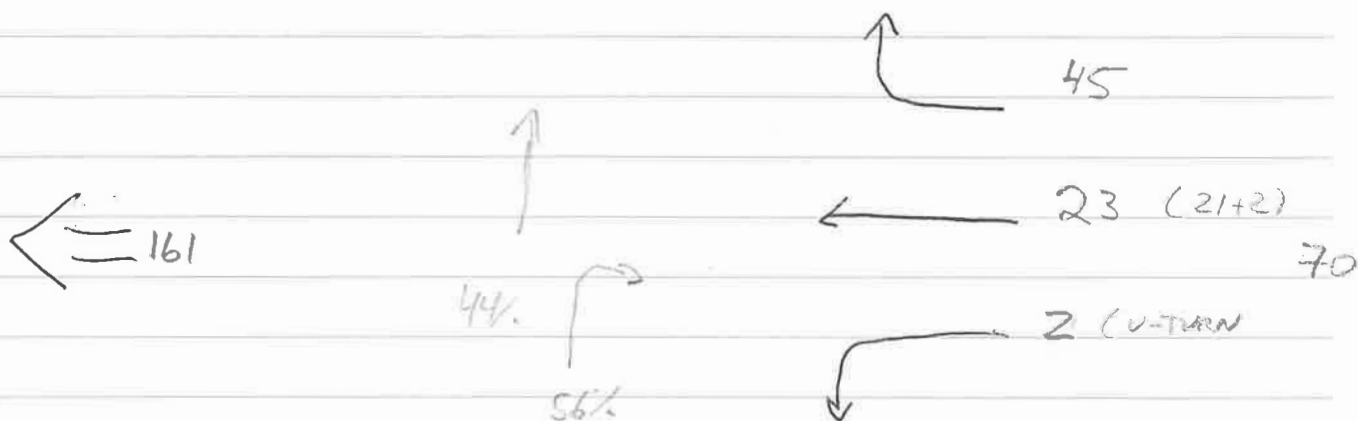
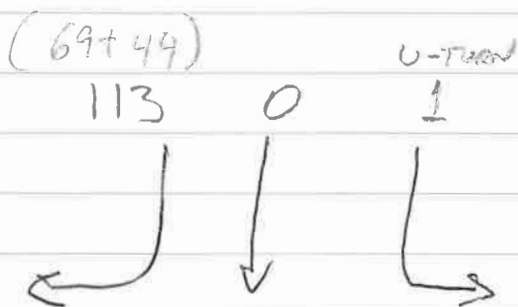
Traffic Volume - Future Total Volume



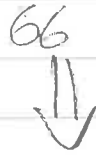
ATTACHMENT C: Project Traffic

E+P AM

114
↓



E+P PM



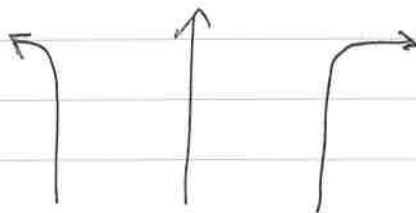
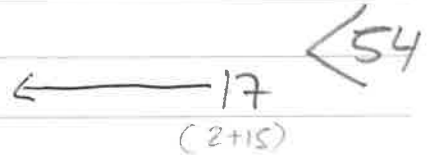
(2+26+38)



46%



→ 54%



28
(2+12+14)

0
35
11
28

0
40

114
↓

63
↑

Prepared by National Data & Surveying Services

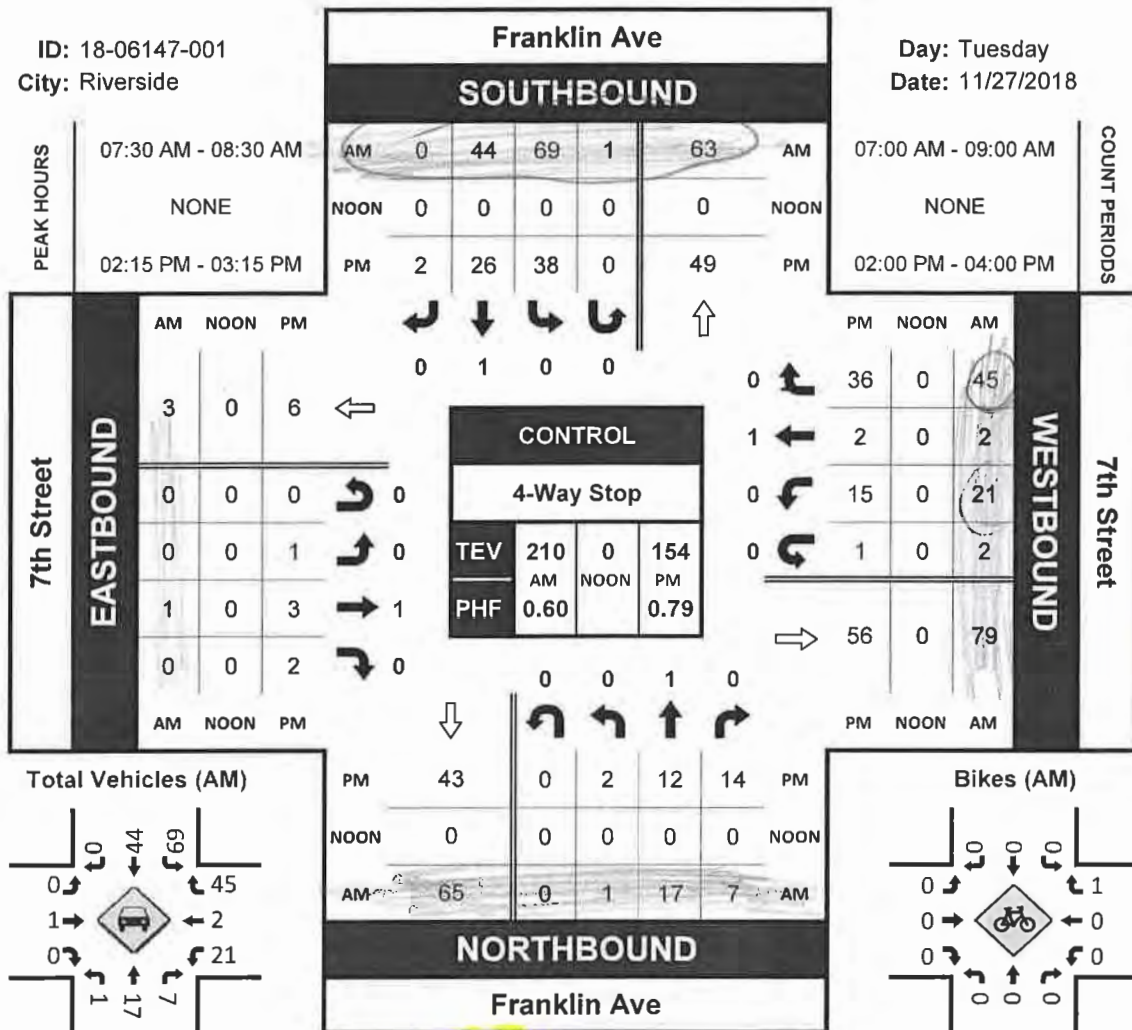
Franklin Ave & 7th Street

↑ 49

Peak Hour Turning Movement Count

ID: 18-06147-001
City: Riverside

Day: Tuesday
Date: 11/27/2018



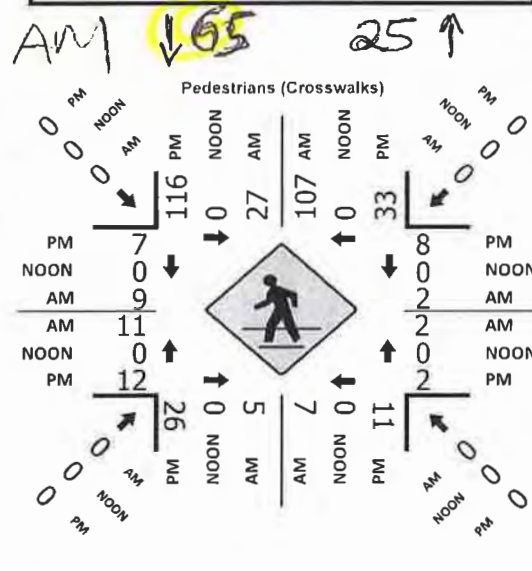
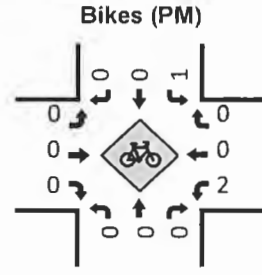
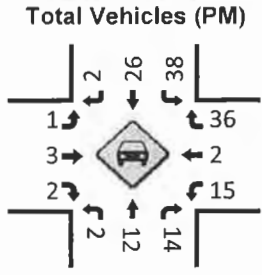
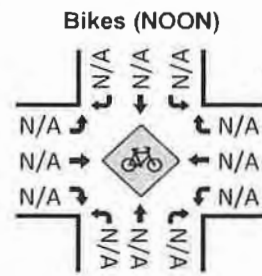
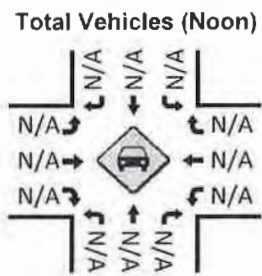
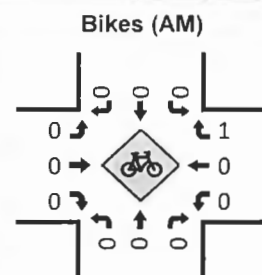
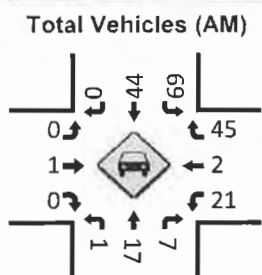
AM
← 70

← 59

→ 79

AM

→ 56



114
+ 70
25

209

PM ↓ 43

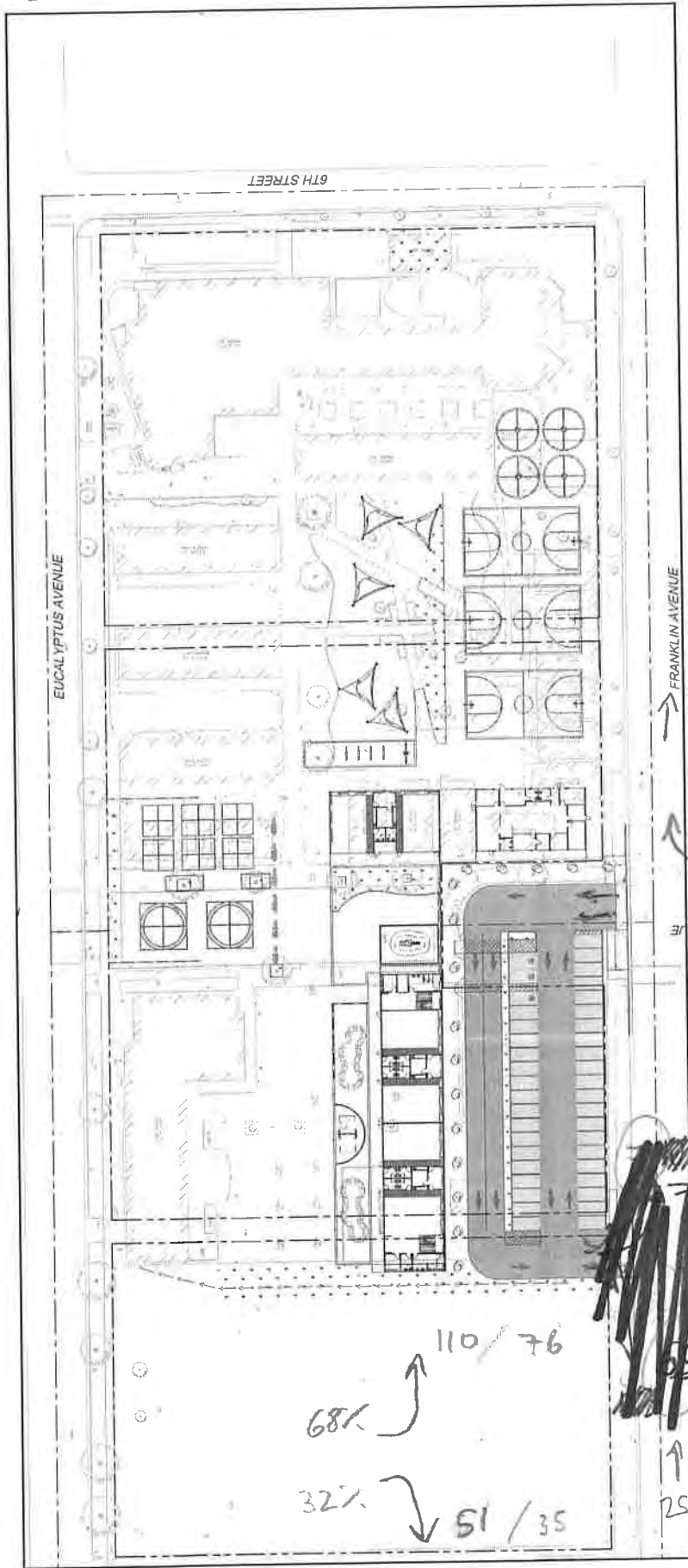
↑ 28

Figure 3-6 - Paving Plan
3. Project Description






$$SBL + SBT + SBR + WOT + WOL + WBL + WBT + WBR = 167$$

$$AM = 69 + 44 + 0 + 2 + 21 + 1 + 17 + 7$$

$$PM = 38 + 26 + 2 + 2 + 15 + 2 + 12 + 14 = 111$$

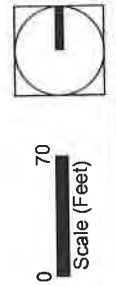


PAVEMENT LEGEND

-  STANDARD DUTY CONCRETE PAVEMENT
-  HEAVY DUTY CONCRETE PAVEMENT
-  STANDARD DUTY ASPHALT CONCRETE PAVEMENT
-  HEAVY DUTY ASPHALT CONCRETE PAVEMENT
-  LANDSCAPE

LEGEND

-  PROPERTY LINE
-  CENTER LINE
-  EASEMENT OR SETBACK LINE



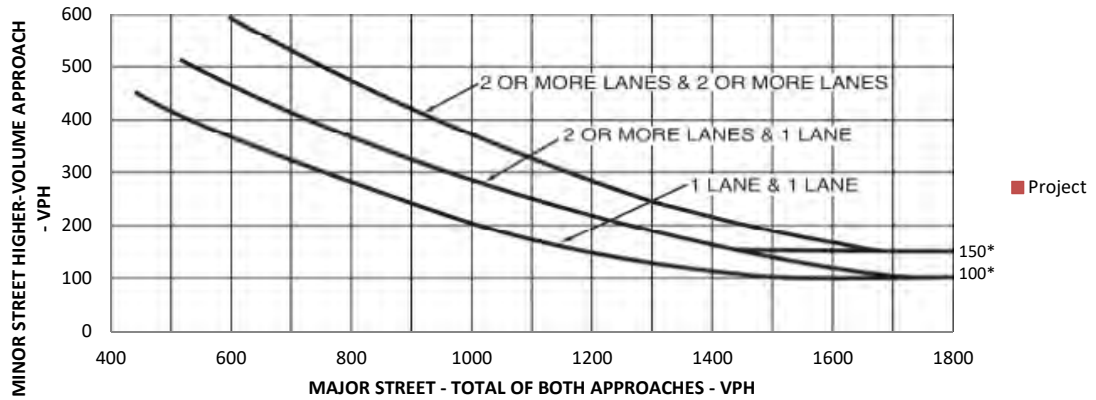
57

ATTACHMENT D: Signal Warrants

Warrant 3, Peak Hour

Traffic Conditions: Existing AM

Major Street Name: <u>Franklin Avenue</u>	Total of Both Approaches (VPH) = 140 Number of Approach Lanes = 1
Minor Street Name: <u>Seventh Street</u>	High Volume Approach (VPH) = 70 Number of Approach Lanes = 1



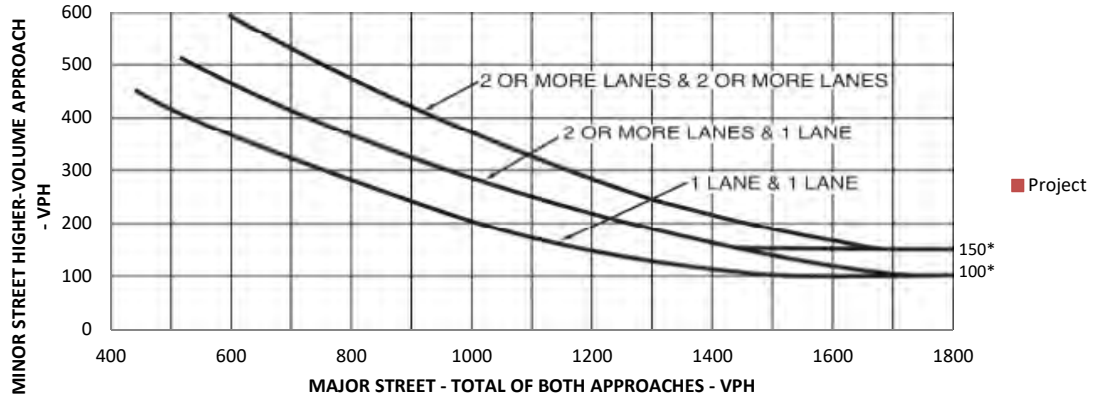
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Control Devices 2014 Edition
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing PM

Major Street Name: <u>Franklin Avenue</u>	Total of Both Approaches (VPH) = 94 Number of Approach Lanes = 1
Minor Street Name: <u>Seventh Street</u>	High Volume Approach (VPH) = 54 Number of Approach Lanes = 1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

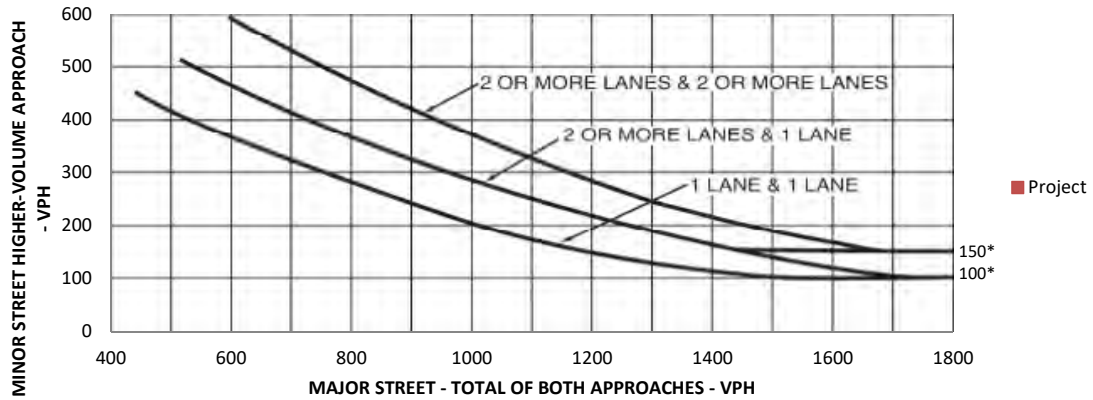
Source: California Manual on Uniform Traffic Control Devices 2014 Edition
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Future AM

Major Street Name: <u>Franklin Avenue</u>	Total of Both Approaches (VPH) = 249
	Number of Approach Lanes = 1

Minor Street Name: <u>Seventh Street</u>	High Volume Approach (VPH) = 70
	Number of Approach Lanes = 1



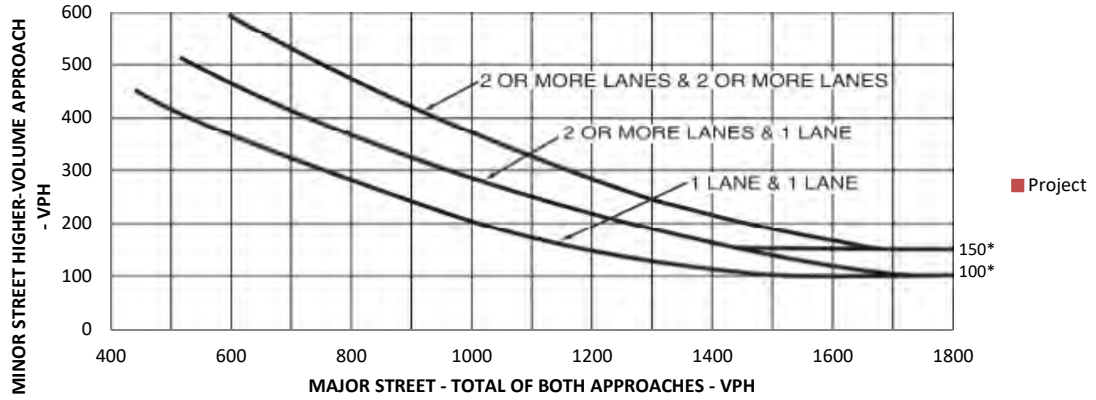
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Control Devices 2014 Edition
 VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Future PM

Major Street Name: <u>Franklin Avenue</u>	Total of Both Approaches (VPH) = 169
	Number of Approach Lanes = 1
Minor Street Name: <u>Seventh Street</u>	High Volume Approach (VPH) = 54
	Number of Approach Lanes = 1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Control Devices 2014 Edition
 VPH - Vehicles Per Hour

Appendices

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