

February 13, 2020

Mr. John Vierra, Architect AIA
NJA Architecture
212 W Pine Street, Suite 1
Lodi, CA 95240

RE: TRAFFIC TECHNICAL MEMORANDUM FOR PA-1900061 ST EDWARDS CATHOLIC CHURCH EXPANSION, SAN JOAQUIN COUNTY

Dear Mr. Vierra:

Thank you for contacting our firm regarding the **St Edwards Catholic Church Expansion Project** in San Joaquin County. As we are aware, the church is located at 731 S. Cardinal Avenue in south Stockton. The "project" involves constructing new church buildings that will be used for ancillary church activities but will not increase the attendance levels for mass on Sundays.

San Joaquin County staff have considered the project's potential traffic impacts and reached a preliminary conclusion of no significant impact under CEQA. Under County guidelines a *Traffic Technical Memorandum* has been requested in lieu of a Traffic Impact Analysis (TIA) in order to provide the evidence needed to support the County's preliminary conclusions. This letter is the result of our assessment under the County's December 2012 guidelines.

Key Issues. I have discussed the project briefly with San Joaquin County staff and understand their concerns to be addressed in the memo:

- Effects of weekday classroom use on traffic conditions at the adjoining Elmwood Elementary School
- Effects of occasional evening use on p.m. peak hour traffic conditions

PROJECT DESCRIPTION

Facilities. The proposed project will expand St Edwards existing facilities by constructing a 18,810 sf multi-purpose building. The building will be used primarily as a gymnasium/hall, and an office, storage commercial kitchen and classrooms for up to 200 students are planned. The building would have a maximum capacity of 400 persons. The facilities available for Mass and the current schedule for services will be unaffected by the project.

Programs. The new building will support many of the current programs offered by St Edwards Church and create opportunities for new activities. Catechism classes are already offered on Tuesday (6:00 to 7:15 p.m.) and Wednesday (9:00 a.m. to 1:00 p.m.), and roughly 80 students attend each session. With the project attendance could increase to 150 students for the foreseeable future. St Edwards Church hosts events today, and with the new hall the attendance could increase to 200 to 250 persons per event. Events are expected once or twice a month on Saturday evenings and once or twice a month on weeknights (i.e., 6:00 p.m. to 10:00 p.m.).

Trip Generation. The number of trips that might theoretically be generated by expansion of an existing church can be estimated based on trip generation rates published by the Institute of Transportation Engineers (ITE). ITE data is derived from observation of similar uses nationally. While an ITE forecast can be a useful starting point for considering possible project impacts, additional review based on knowledge of the church's actual schedule is also needed. As indicated in Table 1, the planned expansion at an "average" church would generate 131 daily trips (½ inbound and ½ outbound) with 6 trips in the a.m. peak hour and 9 trips in the p.m. peak hour. These forecasts fall far below the 50 peak hour trip threshold employed by San Joaquin County to determine whether a traffic impact analysis is required.

Description	Quantity	Daily	AM Peak Hour (7:00 to 9:00 pm)			PM Peak Hour (4:00 to 6:00 pm)		
			% in	% out	Total	% in	% out	Total
Church (code 560)	ksf	6.95	60%	40%	0.33	45%	55%	0.49
St Edwards Church Expansion	18.8 ksf	131	4	2	6	5	5	9

Trip Generation Associated with Typical Weekday Project Uses. The extent to which the specific activities associated with the project will generate traffic can also be estimated based on expected participation and average auto occupancy, as noted in Table 2. As shown, the project will allow the church to increase attendance at classes from 80 to 150 students. Assuming all are dropped off and subsequently picked up by their parents, then another 186 daily trips (i.e., ½ inbound and ½ outbound) would be expected on Tuesday and Wednesday. Technically the morning classes that begin at 9:00 a.m. require travel in the 7:00 to 9:00 a.m. peak hour window, and 93 trips are estimated at that time. Another 93 trips are forecast when classes end at 1:00 p.m. The evening classes that begin at 6:00 p.m. would generate a similar number of vehicles in the evening peak hour.

Activity	Time	Net New Participants	Weekday Trips			
			Daily	AM Peak Hour	1:00 to 2:00 p.m.	PM Peak Hour
Classes - morning	9:00 a.m. to 1:00 p.m.	70	186 ¹	93	93	0
Classes - evening	6:00 p.m. to 7:15 p.m.	70	186	-	-	93
Evening Events	6:00 p.m. to 10:00 p.m.	250	240 ²	-	-	111
Saturday Events	6:30 p.m. to 10:00 p.m.	250	-	-	-	-

¹ assumes all students are dropped off and picked up by parents, with an average auto occupancy of 1.5 students per vehicle
² assumes average auto occupancy of 2.25 attendees per vehicle, plus 18 ancillary trips

KSA

The evening events hosted by St Edwards Church would typically be fundraising / social events. Evening events would not occur on days when evening classes are scheduled. At typical automobile occupancy rates, an event could generate 240 daily trips, and an event beginning at 6:00 p.m. could generate 111 inbound trips during the weekday p.m. peak hour.

BACKGROUND TRAFFIC CONDITIONS

Study Area Roads. St Edwards Church is located on the west side of S. Cardinal Avenue in the area between Ardelle Avenue to the north and E. Main Street to the south. The church is directly opposite Elmwood Elementary School.

In this area S. Cardinal Avenue is a wide two-lane street (i.e., 42 to 50± feet curb to curb). The road section includes regular sidewalk on the church side and a wide sidewalk along the school frontage. The speed limit is posted at 25 mph. On-street parking is prohibited along the southern end of the street but is permitted in the area north of Meadowood Drive. School zone crosswalks have been striped across S. Cardinal Avenue at the Meadowood Drive intersection and at a midblock location in front of St Edwards Church.

St Edwards Church takes access to S. Cardinal Avenue at five gated driveways along its 550 feet of frontage. Elmwood Elementary School has an entrance and exit to its bus drop-off area just south of the church frontage.

At most times traffic flow in this area is generally governed by the operation of the E. Main Street and Ardelle Avenue intersections. The ***E. Main Street / S. Cardinal Avenue intersection*** is a “tee” controlled by a stop sign on the southbound S. Cardinal Avenue approach. Each leg of the intersection has a single through travel lane but a separate eastbound left turn lane is striped on E. Main Street. Crosswalks are marked across the west and north legs of the intersection. The ***Ardelle Avenue / S. Cardinal Avenue intersection*** is controlled by a four-way stop. Each approach has a single travel lane. Crosswalks are striped across the east, west and south legs of the intersection.

Current Traffic Volumes / Conditions. Current traffic conditions in the area of the project have been described based on new traffic volume counts conducted on January 7, 2020 on S. Cardinal Avenue and at the intersections north and south of the project. On that day the following activities occurred at the church:

- 9:30 a.m. to 10:30 a.m.: a women's gathering with 20-30 people
- 5:30 p.m.: Mass
- 6:00 a.m. to 7:00 p.m.: CCD classes
- Random visits to the parish office

S. Cardinal Avenue was observed to carry 2,773 vehicles per day in the area north of E. Main Street. Of that total 434 vehicles used the road in the 7:00 to 8:00 a.m. hour, 354 vehicles were counted from 1:30 to 2:30 p.m. and 235 vehicles used the road from 5:00 to 6:00 p.m. during the evening commute period.

KDA

Peak traffic at the S. Cardinal Avenue intersections with E. Main Street and Ardelle Avenue also occurred at the beginning and end of the school day. At E. Main Street / S. Cardinal Avenue 736 vehicles entered the intersection in the a.m. peak hour and 680 were counted in the p.m. peak hour. At S. Cardinal Avenue / Ardelle Avenue a total of 569 vehicles entered in the a.m. peak hour and 359 were counted in the p.m. At this intersection a total of 34 pedestrians crossing were counted in the a.m. peak hour, but only 9 occurred in the p.m. peak hour.

Traffic engineers describe the quality of traffic flow on street and through intersection in terms of operating Level of Service. Level of Service (LOS) is a letter grade assigned to an intersection based on operating characteristics which most commonly describe the average delay experienced by a motorist waiting at the intersection. A planning level LOS can also be determined for roadway segments based on daily traffic volume. In turn local agencies adopt minimum LOS standards as part of their General Plan or traffic study guidelines. In this case, San Joaquin County has established LOS D as the minimum standard on the roads and intersection in this area.

The San Joaquin County General Plan *Table 4-4 Local Arterial LOS Criteria* identifies planning level LOS thresholds for various street classifications. A two-lane road with a posted speed limit of 30 mph or less is expected to be able to carry up to 11,500 vehicles per day at LOS D. The current daily volume on S. Cardinal Avenue falls well below that threshold.

Table 3 presents the Level of Service calculated for the two study intersections based on the peak hour volumes observed in January. As noted, both intersections provide a Level of Service that satisfies the County's minimum standard. In addition, the volume of traffic occurring at both locations was compared to the peak hour traffic signal warrant requirements presented in the *Manual of Uniform Traffic Control Devices* (MUTCD). Neither intersection carries volumes that reach the level that a traffic signal would be justified.

TABLE 3 EXISTING PEAK HOUR INTERSECTION LEVELS OF SERVICE						
Intersection	Control	AM Peak Hour		PM Peak Hour		Traffic Signal Warrants Met?
		Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service	
S. Cardinal Ave / E. Main St Southbound approach	SB Stop	19.4	C	15.5	C	No
S. Cardinal Ave / Ardelle Ave	All-Way Stop	11.8	B	9.1	B	No
Based on Highway Capacity Manual, 6th Edition methods						

It is important to note that Level of Service analysis addressed the physical capacity of an intersection in comparison to traffic and pedestrian volumes. The analysis does not recognize the effects of other factors that may disrupt traffic flow. For example, the areas near schools often experience short periods of delay and congestion due to constraints caused by on-site parking/drop-off or on-street loading. Often the flow of traffic through a school will be limited by the capacity of its drop-off areas, and the queue of waiting

KDA

traffic can extend back onto the public streets. Similarly, midblock pedestrian activity can be a constant. As a result, traffic conditions can be poor even though the public street has the capacity to accommodate the traffic volumes.

Traffic Conditions Before and After School Day at Elmwood Elementary School. Stockton Unified School District's Elmwood Elementary School operates on a traditional schedule from a site across from St Edwards Church. The school has a current enrollment of about 850 students. The school day begins at 7:40 a.m., although breakfast is served in the cafeteria from 7:10 to 7:40 a.m. The school day ends at 1:40 p.m.

Peak period traffic conditions at the end of the school day were observed along S. Cardinal Avenue. As with most schools, parents arrive well before the bell rings, and parents stopping to retrieve students cause nearly all of the traffic on the street at that time. The St Edwards Church parking lot is made available to parents, and only the church's southern driveway is open at that time. The curb on both sides of S. Cardinal Avenue from Ardelle Avenue south beyond the school is occupied by parent vehicles. Pedestrian activity between the school and parents' vehicles on the west side of the street is directed to the school crosswalk north of the open church driveway, and an adult crossing guard is provided at this location. Nearly all students use the crossing rather than cutting across the street.

In general, the traffic situation is workable. Traffic moves slowly and both parent drivers and student pedestrians obey the crossing guard. Traffic does queue back from the all-way stop at Ardell Avenue to the school. School traffic cleared out in 10-15 minutes, which is normal for most schools.

PROJECT IMPACTS

The project's activity specific trip generation forecasts have been reviewed in comparison to daily traffic on S. Cardinal Avenue, to the time periods associated with Elmwood Elementary School's drop-off and pick up schedule and to conditions in the weekday p.m. peak hour. While the project's trip generation forecasts may exceed the County's threshold for requiring a TIA, because these forecasts are not achieved regularly that threshold should not apply.

Daily Traffic. On a weekday daily basis the greatest number of additional trips accompanies an evening event. These trips will be split between traffic oriented north and south of the church. As a "worst case" if 100% of the trips went in one direction then the current daily volume on S. Cardinal Avenue of 2,773 could increase by 240 trips to 3,013 vehicles per day. This volume remains well below the LOS D threshold for a two lane road.

Effects on Peak Period Traffic Conditions near Elmwood Elementary School. The project would increase the amount of traffic arriving at St Edwards Church in the morning for classes that begin at 9:00 a.m. However, that traffic is likely to occur an hour later than the peak arrival period associated with Elmwood ES's 7:40 a.m. start. The project would not interfere with use of the church parking lot by school parents at that time, and the impact of the project's traffic is not significant at that time. Similarly, parents will pick up additional CCD students after classes at 1:00 p.m. The school day at Elmwood ES ends at 1:40 p.m. We observed that some Elmwood parents did begin to arrive around 1:15 p.m. but church activity would end much earlier than the arrival for the majority of Elmwood parents. Church parking lot availability will not change, and the impacts of the project are not significant.

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Evening events starting at 6:00 p.m. would generate traffic that falls into the 4:00 to 6:00 p.m. period. Because event participation varies, the amount of traffic added to each study intersection would vary. However, because current background traffic volumes in the p.m. peak hour are low and the operating Levels of Service are very good, the S. Cardinal Avenue / Ardelle Avenue intersection would still operate at LOS B if all inbound traffic used that intersection. Similarly, the E. Main Street / S. Cardinal Avenue intersection would continue to operate at LOS C if all inbound traffic used that intersection. Because the County's minimum LOS threshold will still be met, the project's impact is not significant.

Thank you again for contacting our firm for this assignment. Please feel free to call me if you have any questions or need additional information.

Sincerely,

KD Anderson & Associates, Inc.

A handwritten signature in black ink, appearing to read 'K. Anderson', with a long horizontal flourish extending to the right.

Kenneth D. Anderson, P.E.
President

Enc: Traffic counts, LOS worksheets

Prepared by National Data & Surveying Services

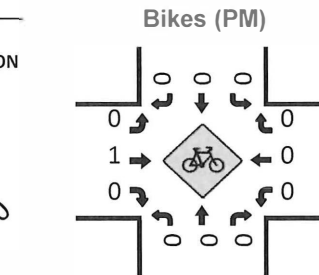
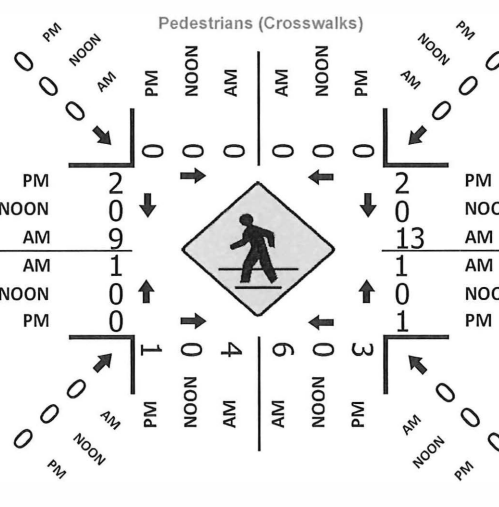
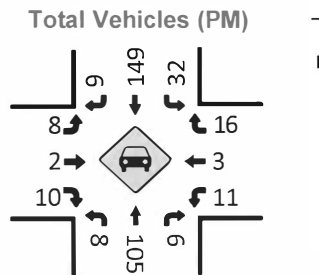
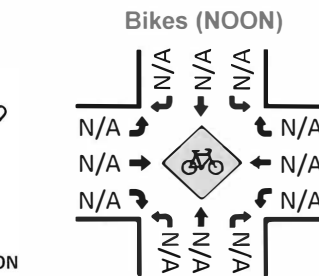
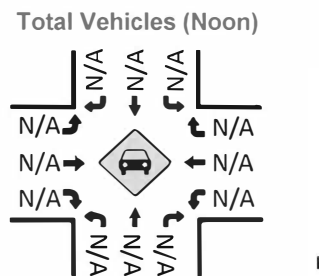
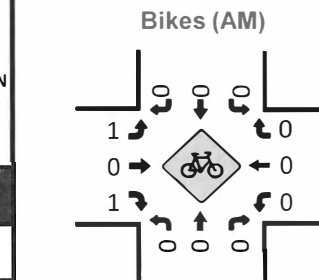
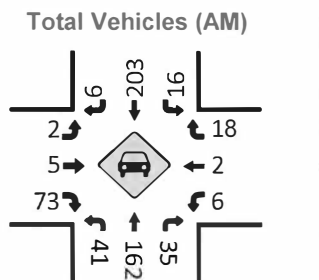
S Cardinal Ave & Ardelle Ave

Peak Hour Turning Movement Count

ID: 20-07005-001
City: Stockton

Day: Tuesday
Date: 01/07/2020

PEAK HOURS		S Cardinal Ave										COUNT PERIODS	
		SOUTHBOUND											
PEAK HOURS	07:00 AM - 08:00 AM	AM	6	203	16	0	182	AM	07:00 AM - 09:30 AM	COUNT PERIODS			
	NONE	NOON	0	0	0	0	0	NOON	NONE				
	05:00 PM - 06:00 PM	PM	9	149	32	0	129	PM	04:00 PM - 06:00 PM				
Ardelle Ave	EASTBOUND	AM	NOON	PM	CONTROL				PM	NOON	AM		
		49	0	20	0				16	0	18		
		0	0	0	TEV				3	0	2		
		2	0	8	PHF				11	0	6		
		5	0	2	569				0	0	0		
		73	0	10	0.63				40	0	56		
		AM	NOON	PM	NORTHBOUND				PM	NOON	AM		
					0								
					0								
					0								
					0								
					0								



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Cardinal Ave & Ardelle Ave
 City: Stockton
 Control:

Project ID: 20-07005-001
 Date: 1/7/2020

Total

NS/EW Streets:	S Cardinal Ave				S Cardinal Ave				Ardelle Ave				Ardelle Ave				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	2	19	2	0	5	37	1	0	1	2	12	0	1	1	6	0	89
7:15 AM	11	49	9	0	8	87	1	0	1	1	27	0	1	1	5	0	201
7:30 AM	22	74	20	0	3	65	4	0	0	1	31	0	4	0	2	0	226
7:45 AM	6	20	4	0	0	14	0	0	0	1	3	0	0	0	5	0	53
8:00 AM	2	7	0	0	3	15	0	0	2	1	0	0	1	2	1	0	34
8:15 AM	1	6	1	0	3	7	0	0	0	0	2	0	0	1	1	0	22
8:30 AM	0	5	2	0	0	9	0	0	0	0	0	0	1	0	1	0	18
8:45 AM	2	8	0	0	2	8	0	0	1	0	1	0	0	0	3	0	25
9:00 AM	0	10	0	0	1	12	1	0	0	0	0	0	0	0	1	0	25
9:15 AM	0	7	0	0	3	10	2	0	0	1	2	0	2	1	2	0	30
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	46	205	38	0	28	264	9	0	5	7	78	0	10	6	27	0	723
	15.92%	70.93%	13.15%	0.00%	9.30%	87.71%	2.99%	0.00%	5.56%	7.78%	86.67%	0.00%	23.26%	13.95%	62.79%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	41	162	35	0	16	203	6	0	2	5	73	0	6	2	18	0	569
PEAK HR FACTOR :	0.466	0.547	0.438	0.000	0.500	0.583	0.375	0.000	0.500	0.625	0.589	0.000	0.375	0.500	0.750	0.000	0.629
	0.513				0.586				0.625				0.813				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
4:00 PM	3	23	2	0	5	28	2	0	0	3	2	0	3	1	1	0	73
4:15 PM	3	27	6	0	8	31	2	0	0	3	3	0	1	0	3	0	87
4:30 PM	3	20	0	0	7	12	5	0	1	2	0	0	0	3	7	0	60
4:45 PM	0	37	4	0	10	28	6	0	0	1	2	0	1	2	2	0	93
5:00 PM	0	28	1	0	7	19	3	0	2	0	0	0	1	0	2	0	63
5:15 PM	4	27	1	0	9	31	2	0	0	2	0	0	2	2	2	0	82
5:30 PM	2	15	3	0	7	33	1	0	4	0	3	0	3	1	6	0	78
5:45 PM	2	35	1	0	9	66	3	0	2	0	7	0	5	0	6	0	136
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	17	212	18	0	62	248	24	0	9	11	17	0	16	9	29	0	672
	6.88%	85.83%	7.29%	0.00%	18.56%	74.25%	7.19%	0.00%	24.32%	29.73%	45.95%	0.00%	29.63%	16.67%	53.70%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	8	105	6	0	32	149	9	0	8	2	10	0	11	3	16	0	359
PEAK HR FACTOR :	0.500	0.750	0.500	0.000	0.889	0.564	0.750	0.000	0.500	0.250	0.357	0.000	0.550	0.375	0.667	0.000	0.660
	0.783				0.609				0.556				0.682				

National Data & Surveying Services

Intersection Turning Movement Count

Location: S Cardinal Ave & Ardelle Ave
 City: Stockton
 Control: 0

Project ID: 20-07005-001
 Date: 1/7/2020

Bikes

NS/EW Streets:	S Cardinal Ave				S Cardinal Ave				Ardelle Ave				Ardelle Ave					
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
7:30 AM	0	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	0	0	0	0
8:00 AM	0	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	0
8:30 AM	0	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	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	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	1	0	1	0	0	0	0	0	2	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250	
	0.250																	

NS/EW Streets:	S Cardinal Ave				S Cardinal Ave				Ardelle Ave				Ardelle Ave					
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	1	0	0	0	5
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	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	5	0	0	0	1	0	0	6	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	
	0.250																	

National Data & Surveying Services

Intersection Turning Movement Count

Location: S Cardinal Ave & Ardelle Ave
City: Stockton

Project ID: 20-07005-001
Date: 1/7/2020

Pedestrians (Crosswalks)

NS/EW Streets:	S Cardinal Ave		S Cardinal Ave		Ardelle Ave		Ardelle Ave		TOTAL
	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
AM	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	2	0	1	0	0	3
7:15 AM	0	0	4	3	0	4	0	2	13
7:30 AM	0	0	0	1	1	8	1	5	16
7:45 AM	0	0	0	0	0	0	0	2	2
8:00 AM	0	0	0	1	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	1	0	1	2
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	0	4	7	1	14	1	10	37
			36.36%	63.64%	6.67%	93.33%	9.09%	90.91%	
PEAK HR :	07:00 AM - 08:00 AM								TOTAL
PEAK HR VOL :	0	0	4	6	1	13	1	9	34
PEAK HR FACTOR :			0.250	0.500	0.250	0.406	0.250	0.450	0.531
			0.357		0.389		0.417		

NS/EW Streets:	S Cardinal Ave		S Cardinal Ave		Ardelle Ave		Ardelle Ave		TOTAL
	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
PM	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	3	3	0	2	0	1	9
4:15 PM	0	0	3	1	3	0	0	0	7
4:30 PM	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	2	1	0	0	0	0	3
5:00 PM	0	0	0	1	0	0	0	2	3
5:15 PM	0	0	1	2	1	2	0	0	6
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	0	9	9	4	4	0	3	29
			50.00%	50.00%	50.00%	50.00%	0.00%	100.00%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	0	0	1	3	1	2	0	2	9
PEAK HR FACTOR :			0.250	0.375	0.250	0.250		0.250	0.375
			0.333		0.250		0.250		

Prepared by National Data & Surveying Services

S Cardinal Ave & Main St

Peak Hour Turning Movement Count

ID: 20-07005-002
City: Stockton

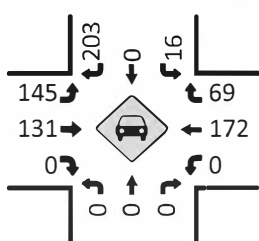
Day: Tuesday
Date: 01/07/2020

PEAK HOURS		S Cardinal Ave						COUNT PERIODS	
07:00 AM - 08:00 AM		SOUTHBOUND						07:00 AM - 09:30 AM	
NONE		AM	0	16	0	214	AM	NONE	
04:00 PM - 05:00 PM		NOON	0	0	0	0	NOON	04:00 PM - 06:00 PM	
		PM	58	0	34	0	115	PM	

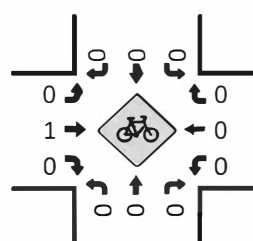
Main St	EASTBOUND			CONTROL			WESTBOUND		
	AM	NOON	PM	0			PM	NOON	AM
	375	0	317	0	0	0	45	0	69
	0	0	0	0	0	0	259	0	172
	145	0	70	0	0	0	0	0	0
	131	0	214	0	0	0	0	0	0
	0	0	0	0	0	0	248	0	147
	AM	NOON	PM	AM	NOON	PM	PM	NOON	AM

TEV		PHF	
736	0	0.63	0.80
AM	NOON		PM

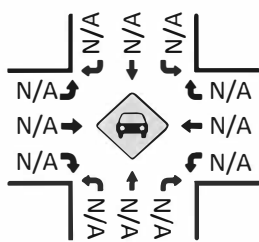
Total Vehicles (AM)



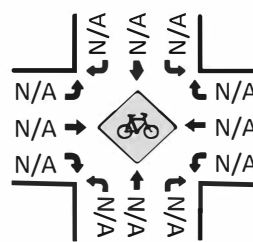
Bikes (AM)



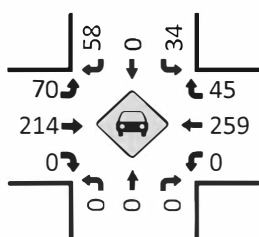
Total Vehicles (Noon)



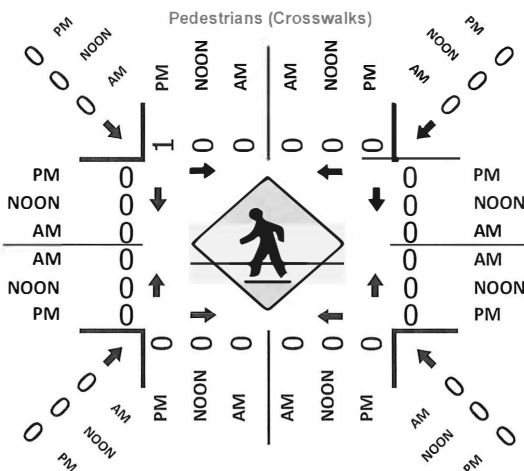
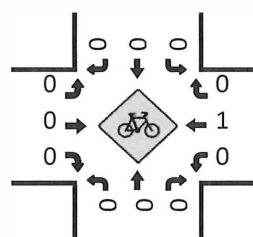
Bikes (NOON)



Total Vehicles (PM)



Bikes (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Cardinal Ave & Main St
 City: Stockton
 Control:

Project ID: 20-07005-002
 Date: 1/7/2020

NS/EW Streets:		Total																TOTAL
		S Cardinal Ave				S Cardinal Ave				Main St				Main St				
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
	7:00 AM	0	0	0	0	6	0	22	0	20	24	0	0	0	43	7	0	122
	7:15 AM	0	0	0	0	3	0	57	0	45	34	0	0	0	48	22	0	209
	7:30 AM	0	0	0	0	5	0	94	0	72	42	0	0	0	44	37	0	294
	7:45 AM	0	0	0	0	2	0	30	0	8	31	0	0	0	37	3	0	111
	8:00 AM	0	0	0	0	4	0	13	0	4	20	0	0	0	44	1	0	86
	8:15 AM	0	0	0	0	3	0	10	0	6	16	0	0	0	32	1	0	68
	8:30 AM	0	0	0	0	2	0	5	0	6	21	0	0	0	37	2	0	73
	8:45 AM	0	0	0	0	1	0	8	0	4	23	0	0	0	28	6	0	70
	9:00 AM	0	0	0	0	2	0	4	0	7	12	0	0	0	28	1	0	54
	9:15 AM	0	0	0	0	4	0	8	0	6	16	0	0	0	24	4	0	62
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	32	0	251	0	178	239	0	0	0	365	84	0	1149
PEAK HR :	07:00 AM - 08:00 AM					11.31%	0.00%	88.69%	0.00%	42.69%	57.31%	0.00%	0.00%	0.00%	81.29%	18.71%	0.00%	TOTAL
PEAK HR VOL :		0	0	0	0	16	0	203	0	145	131	0	0	0	172	69	0	736
PEAK HR FACTOR :		0.000	0.000	0.000	0.000	0.667	0.000	0.540	0.000	0.503	0.780	0.000	0.000	0.000	0.896	0.466	0.000	0.626
						0.553				0.605				0.744				
PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
	4:00 PM	0	0	0	0	14	0	16	0	17	56	0	0	0	50	7	0	160
	4:15 PM	0	0	0	0	9	0	16	0	20	49	0	0	0	56	10	0	160
	4:30 PM	0	0	0	0	5	0	10	0	13	56	0	0	0	55	8	0	147
	4:45 PM	0	0	0	0	6	0	16	0	20	53	0	0	0	98	20	0	213
	5:00 PM	0	0	0	0	4	0	14	0	18	62	0	0	0	36	8	0	142
	5:15 PM	0	0	0	0	11	0	13	0	27	47	0	0	0	54	13	0	165
	5:30 PM	0	0	0	0	7	0	12	0	19	57	0	0	0	35	5	0	135
	5:45 PM	0	0	0	0	6	0	24	0	45	47	0	0	0	49	8	0	179
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	62	0	121	0	179	427	0	0	0	433	79	0	1301
PEAK HR :	04:00 PM - 05:00 PM					33.88%	0.00%	66.12%	0.00%	29.54%	70.46%	0.00%	0.00%	0.00%	84.57%	15.43%	0.00%	TOTAL
PEAK HR VOL :		0	0	0	0	34	0	58	0	70	214	0	0	0	259	45	0	680
PEAK HR FACTOR :		0.000	0.000	0.000	0.000	0.607	0.000	0.906	0.000	0.875	0.955	0.000	0.000	0.000	0.661	0.563	0.000	0.798
						0.767				0.973				0.644				

National Data & Surveying Services

Intersection Turning Movement Count

Location: S Cardinal Ave & Main St
 City: Stockton
 Control: 0

Project ID: 20-07005-002
 Date: 1/7/2020

Bikes

NS/EW Streets:	S Cardinal Ave				S Cardinal Ave				Main St				Main St					
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	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	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	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	0
8:30 AM	0	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	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	1	0	0	0	1	0	0	2	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	

NS/EW Streets:	S Cardinal Ave				S Cardinal Ave				Main St				Main St					
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	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	1	0	0	1	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
PEAK HR FACTOR :	0.00	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	0.000	0.250	

National Data & Surveying Services

Intersection Turning Movement Count

Location: S Cardinal Ave & Main St
City: Stockton

Project ID: 20-07005-002
Date: 1/7/2020

Pedestrians (Crosswalks)

NS/EW Streets:	S Cardinal Ave		S Cardinal Ave		Main St		Main St		TOTAL
	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
AM	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	1	0	0	0	0	0	0	1
	0.00%	100.00%							
PEAK HR :	07:00 AM - 08:00 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

NS/EW Streets:	S Cardinal Ave		S Cardinal Ave		Main St		Main St		TOTAL
	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
PM	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	1	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	1	0	0	0	0	0	0	0	1
	100.00%	0.00%							
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.250	0.250							0.250

Prepared by National Data & Surveying Services

VOLUME

S Cardinal Ave N/O Main St

Day: Tuesday
Date: 1/7/2020City: Stockton
Project #: CA20_7006_001

DAILY TOTALS					NB	SB	EB	WB	Total		
					1,332	1,441	0	0	2,773		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
0:00	0	5			5	12:00	12	16			28
0:15	1	1			2	12:15	11	12			23
0:30	1	1			2	12:30	9	16			25
0:45	0	2	1	8	10	12:45	20	52	12	56	108
1:00	1	1			2	13:00	14	12			26
1:15	2	1			3	13:15	34	19			53
1:30	1	0			1	13:30	61	24			85
1:45	0	4	1	3	7	13:45	42	151	121	176	327
2:00	0	0			0	14:00	23	31			54
2:15	1	0			1	14:15	20	32			52
2:30	0	0	1		1	14:30	15	34			49
2:45	1	2	3	4	6	14:45	18	76	25	122	198
3:00	0	3			3	15:00	17	23			40
3:15	3	4			7	15:15	29	17			46
3:30	1	2			3	15:30	33	25			58
3:45	2	6	0	9	15	15:45	28	107	27	92	199
4:00	0	2			2	16:00	25	30			55
4:15	1	2			3	16:15	29	27			56
4:30	2	14			16	16:30	21	13			34
4:45	7	10	5	23	33	16:45	40	115	21	91	206
5:00	5	2			7	17:00	26	20			46
5:15	2	7			9	17:15	40	22			62
5:30	2	4			6	17:30	24	23			47
5:45	6	15	13	26	41	17:45	53	143	27	92	235
6:00	8	13			21	18:00	34	31			65
6:15	10	12			22	18:15	18	28			46
6:30	14	15			29	18:30	19	12			31
6:45	13	45	12	52	97	18:45	7	78	17	88	166
7:00	27	28			55	19:00	24	10			34
7:15	68	60			128	19:15	18	69			87
7:30	108	101			209	19:30	9	21			30
7:45	12	215	30	219	434	19:45	13	64	12	112	176
8:00	5	16			21	20:00	13	9			22
8:15	7	13			20	20:15	10	8			18
8:30	9	8			17	20:30	11	9			20
8:45	9	30	7	44	74	20:45	4	38	3	29	67
9:00	8	6			14	21:00	5	10			15
9:15	10	13			23	21:15	2	11			13
9:30	10	9			19	21:30	6	5			11
9:45	9	37	11	39	76	21:45	7	20	4	30	50
10:00	9	12			21	22:00	6	5			11
10:15	11	10			21	22:15	4	3			7
10:30	9	16			25	22:30	4	2			6
10:45	9	38	10	48	86	22:45	5	19	1	11	30
11:00	14	15			29	23:00	4	7			11
11:15	7	11			18	23:15	6	4			10
11:30	11	10			21	23:30	2	2			4
11:45	19	51	17	53	104	23:45	2	14	1	14	28
TOTALS	455	528			983	TOTALS	877	913			1790
SPLIT %	46.3%	53.7%			35.4%	SPLIT %	49.0%	51.0%			64.6%

DAILY TOTALS					NB	SB	EB	WB	Total
					1,332	1,441	0	0	2,773
AM Peak Hour	6:45	7:00			7:00	PM Peak Hour	13:15	13:45	13:15
AM Pk Volume	216	219			434	PM Pk Volume	160	218	355
Pk Hr Factor	0.500	0.542			0.519	Pk Hr Factor	0.656	0.450	0.544
7 - 9 Volume	245	263			508	4 - 6 Volume	258	183	441
7 - 9 Peak Hour	7:00	7:00			7:00	4 - 6 Peak Hour	17:00	17:00	17:00
7 - 9 Pk Volume	215	219			434	4 - 6 Pk Volume	143	92	235
Pk Hr Factor	0.498	0.542			0.519	Pk Hr Factor	0.675	0.852	0.734

Intersection

Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	5	73	6	2	18	41	162	35	16	203	6
Future Vol, veh/h	2	5	73	6	2	18	41	162	35	16	203	6
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	8	116	10	3	29	65	257	56	25	322	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.4	9	12.5	12.2
HCM LOS	A	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	3%	23%	7%
Vol Thru, %	68%	6%	8%	90%
Vol Right, %	15%	91%	69%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	80	26	225
LT Vol	41	2	6	16
Through Vol	162	5	2	203
RT Vol	35	73	18	6
Lane Flow Rate	378	127	41	357
Geometry Grp	1	1	1	1
Degree of Util (X)	0.496	0.184	0.064	0.476
Departure Headway (Hd)	4.726	5.217	5.568	4.796
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	756	692	647	743
Service Time	2.811	3.22	3.573	2.883
HCM Lane V/C Ratio	0.5	0.184	0.063	0.48
HCM Control Delay	12.5	9.4	9	12.2
HCM Lane LOS	B	A	A	B
HCM 95th-tile Q	2.8	0.7	0.2	2.6

Intersection												
Int Delay, s/veh	8.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑			↗			↑			↕	
Traffic Vol, veh/h	145	131	0	0	172	69	0	0	0	16	0	203
Future Vol, veh/h	145	131	0	0	172	69	0	0	0	16	0	203
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	78	92	92	89	47	92	92	92	67	92	54
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	290	168	0	0	193	147	0	0	0	24	0	376

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	340	0	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	-
Pot Cap-1 Maneuver	1219	0	0	-
Stage 1	-	0	0	-
Stage 2	-	0	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1219	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.6	0	0	19.4
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	1219	-	-	-	643
HCM Lane V/C Ratio	-	0.238	-	-	-	0.622
HCM Control Delay (s)	0	8.9	-	-	-	19.4
HCM Lane LOS	A	A	-	-	-	C
HCM 95th %tile Q(veh)	-	0.9	-	-	-	4.3

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	2	10	11	3	16	8	105	6	32	149	9
Future Vol, veh/h	8	2	10	11	3	16	8	105	6	32	149	9
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	3	15	17	5	24	12	159	9	48	226	14
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	8.1	8.7	9.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	40%	37%	17%
Vol Thru, %	88%	10%	10%	78%
Vol Right, %	5%	50%	53%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	119	20	30	190
LT Vol	8	8	11	32
Through Vol	105	2	3	149
RT Vol	6	10	16	9
Lane Flow Rate	180	30	45	288
Geometry Grp	1	1	1	1
Degree of Util (X)	0.22	0.04	0.06	0.345
Departure Headway (Hd)	4.396	4.806	4.757	4.312
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	819	745	753	838
Service Time	2.415	2.836	2.786	2.327
HCM Lane V/C Ratio	0.22	0.04	0.06	0.344
HCM Control Delay	8.7	8	8.1	9.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0.1	0.2	1.5

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑			↑			↑			↔	
Traffic Vol, veh/h	70	214	0	0	259	45	0	0	0	34	0	58
Future Vol, veh/h	70	214	0	0	259	45	0	0	0	34	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200											
Veh in Median Storage, #	-	0			0			0			0	
Grade, %	-	0			0			0			0	
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	88	268	0	0	324	56	0	0	0	43	0	73

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	380	0	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	-
Pot Cap-1 Maneuver	1178	0	0	0
Stage 1	-	0	0	0
Stage 2	-	0	0	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1178	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0	0	15.5
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	1178	-	-	-	456
HCM Lane V/C Ratio	-	0.074	-	-	-	0.252
HCM Control Delay (s)	0	8.3	-	-	-	15.5
HCM Lane LOS	A	A	-	-	-	C
HCM 95th %tile Q(veh)	-	0.2	-	-	-	1

Intersection

Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	2	10	11	3	16	8	105	6	32	260	9
Future Vol, veh/h	8	2	10	11	3	16	8	105	6	32	260	9
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	3	15	17	5	24	12	159	9	48	394	14
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.5	8.5	9	12.5
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %		7%	40%	37%
Vol Thru, %		88%	10%	10%
Vol Right, %		5%	50%	53%
Sign Control		Stop	Stop	Stop
Traffic Vol by Lane		119	20	30
LT Vol		8	8	11
Through Vol		105	2	3
RT Vol		6	10	16
Lane Flow Rate		180	30	45
Geometry Grp		1	1	1
Degree of Util (X)		0.229	0.044	0.065
Departure Headway (Hd)		4.582	5.183	5.132
Convergence, Y/N		Yes	Yes	Yes
Cap		783	688	696
Service Time		2.613	3.232	3.178
HCM Lane V/C Ratio		0.23	0.044	0.065
HCM Control Delay		9	8.5	8.5
HCM Lane LOS		A	A	A
HCM 95th-tile Q		0.9	0.1	0.2

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑			↗			↑			↕	
Traffic Vol, veh/h	181	214	0	0	259	45	0	0	0	34	0	58
Future Vol, veh/h	181	214	0	0	259	45	0	0	0	34	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	226	268	0	0	324	56	0	0	0	43	0	73

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	380	0	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	-
Pot Cap-1 Maneuver	1178	-	0	0
Stage 1	-	-	0	0
Stage 2	-	-	0	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1178	-	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4	0	0	22.2
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	1178	-	-	-	323
HCM Lane V/C Ratio	-	0.192	-	-	-	0.356
HCM Control Delay (s)	-	0	8.8	-	-	22.2
HCM Lane LOS	-	A	A	-	-	C
HCM 95th %tile Q(veh)	-	0.7	-	-	-	1.6

Sanfilippo, Giuseppe [CDD]

From: Sanfilippo, Giuseppe [CDD]
Sent: Wednesday, April 1, 2020 1:32 PM
To: Levers, Jeffrey [PW]
Subject: RE: 213-270-23 Cross Street Roadway Classifications.

Jeff,

Thank you for your help with this.

Regards,

Giuseppe Sanfilippo

Associate Planner
Community Development Department
Main Office: (209) 468-3121
Direct: (209) 468-0227
Fax: (209) 468-3163
Please also visit us On-line: <https://www.sjgov.org/commdev>

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From: Levers, Jeffrey [PW] <jlevers@sjgov.org>
Sent: Monday, March 30, 2020 2:41 PM
To: Sanfilippo, Giuseppe [CDD] <gsanfilippo@sjgov.org>
Subject: RE: 213-270-23 Cross Street Roadway Classifications.

From page 5 of the TIS, for reference:

ASSESSMENT OF PROPOSED PROJECT

Proposed Project Trip Generation

The number of trips anticipated to be generated by proposed projects are typically approximated using data included in the *Trip Generation Manual, 9th Edition*, published by the Institute of Transportation Engineers (ITE). This resource provides trip generation information for a Truck Terminal (ITE land use code 30) for AM and PM peak-hours. The trip generation rates for the proposed Project were based on the total number of acres within the project site. The anticipated trip generation for this project is shown in Table 1.

Table 1 – Proposed Project Trip Generation

Land Use (ITE Code)	Size (ksf/ acres)	Daily Trips	AM Peak-Hour					PM Peak-Hour				
			Total Trips	In		Out		Total Trips	In		Out	
				%	Trips	%	Trips		%	Trips	%	Trips
Truck Terminal (30)	4.5 acres	370	33	42%	14	58%	19	29	41%	12	59%	17
New Project Trips		370	33		14		19	29		12		17

Source: Trip Generation Manual, 9th Edition

As shown in Table 1, the proposed Project is estimated to generate 370 new external daily trips, 33 new external trips occurring during the AM peak-hour, and 29 new external trips during the PM peak-hour.

Jeffrey Levers, T.E.

Department of Public Works
 Transportation Engineering Division
 (209) 953-7631 (209) 468-2999 fax

From: Levers, Jeffrey [PW]
Sent: Monday, March 30, 2020 2:41 PM
To: Sanfilippo, Giuseppe [CDD] <ggsanfilippo@sjgov.org>
Subject: RE: 213-270-23 Cross Street Roadway Classifications.

Okay, just finished verifying, and yes, the TIS was based on overall acreage for ITE Land Use 030, Truck Terminal. This is the most conservative analysis we could do, and accounts for any number of uses for that property. This way, no matter how the parking layout changes or number of trucks/trailers increases or decreases, unless they add more acreage to the project footprint, it's all covered!

Jeffrey Levers, T.E.

Department of Public Works
 Transportation Engineering Division
 (209) 953-7631 (209) 468-2999 fax

From: Sanfilippo, Giuseppe [CDD] <ggsanfilippo@sjgov.org>
Sent: Monday, March 30, 2020 11:26 AM
To: Levers, Jeffrey [PW] <jlevers@sjgov.org>
Subject: RE: 213-270-23 Cross Street Roadway Classifications.

Jeff,

Thank you for the information on 213-270-23. There is a lady asking if that can be re-zoned to commercial so they can do an outdoor auto auction place. So C-RS is really the only zone that might work, and the locational criteria in the General Plan requires roadway classifications of collector or higher.

On to the Trans System question, did the scope of the traffic study take into account just the 171 total trailers? Because I have a Site plan that shows parking spaces for 50 trucks and 160 trailers. The site is currently approved for a maximum of twenty (20) trucks. I know sometimes the Traffic Impact Studies are conservative, is there provision in this approved Traffic Impact Study for an additional thirty (30) trucks? Otherwise they'll have to submit new site plans.

Thanks,

Giuseppe Sanfilippo

Associate Planner

Community Development Department

Main Office: (209) 468-3121

Direct: (209) 468-0227

Fax: (209) 468-3163

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From: Levers, Jeffrey [PW] <jlevers@sjgov.org>
Sent: Monday, March 30, 2020 10:35 AM
To: Sanfilippo, Giuseppe [CDD] <gsanfilippo@sjgov.org>
Cc: Heylin, Christopher [PW] <cheylin@sjgov.org>
Subject: RE: 213-270-23 Cross Street Roadway Classifications.

Hi Giuseppe,

Grant Line Road is classified as Major Collector between Banta Rd to the west and Eleventh St to the east. Berry Ave is classified as a Minor Collector. I'm almost afraid to ask, but what are they proposing doing with that huge property?

Also, you mentioned to me in the parking lot last week that you had a question about the Trans Systems project – did that resolve itself, or do you still have a question for me on it?

Jeffrey Levers, T.E.

Department of Public Works

Transportation Engineering Division

(209) 953-7631

(209) 468-2999 fax

From: Sanfilippo, Giuseppe [CDD] <gsanfilippo@sjgov.org>
Sent: Monday, March 30, 2020 10:07 AM
To: Levers, Jeffrey [PW] <jlevers@sjgov.org>
Cc: Heylin, Christopher [PW] <cheylin@sjgov.org>
Subject: 213-270-23 Cross Street Roadway Classifications.

Good Morning,

The subject parcel has frontage along West Grant Line Road and West Berry Avenue. What is the roadway classification for those two roads?

Thanks,

Giuseppe Sanfilippo

Associate Planner

Community Development Department

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