

APPENDIX A

Glossary of Transportation Terms

Planning Commission - Exhibit 1 - Development Review Committee Staff Report
Development Review Committee - Exhibit 7 - CEQA Documents

GLOSSARY OF TRANSPORTATION TERMS

COMMON ABBREVIATIONS

AC:	Acres
ADT:	Average Daily Traffic
Caltrans:	California Department of Transportation
DU:	Dwelling Unit
ICU:	Intersection Capacity Utilization
LOS:	Level of Service
TSF:	Thousand Square Feet
V/C:	Volume/Capacity
VMT:	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The total volume during a year divided by the number of days in a year. Usually only weekdays are included.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A constriction along a travelway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CYCLE LENGTH: The time period in seconds required for one complete signal cycle.

CUL-DE-SAC STREET: A local street open at one end only, and with special provisions for turning around.

DAILY CAPACITY: The daily volume of traffic that will result in a volume during the peak hour equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

ORIGIN-DESTINATION SURVEY: A survey to determine the point of origin and the point of destination for a given vehicle trip.

PASSENGER CAR EQUIVALENTS (PCE): One car is one Passenger Car Equivalent. A truck is equal to 2 or 3 Passenger Car Equivalents in that a truck requires longer to start, goes slower, and accelerates slower. Loaded trucks have a higher Passenger Car Equivalent than empty trucks.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through a signalized intersection.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination; i.e. each trip has two trip-ends. A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B

City of Riverside Scoping Agreement

Planning Commission - Exhibit 1 - Development Review Committee Staff Report
Development Review Committee - Exhibit 7 - CEQA Documents

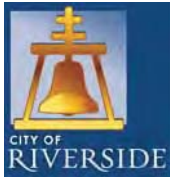


Exhibit B

SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the City of Riverside Public Works Traffic Engineering Division requirements for traffic impact analysis of the following project. The analysis must follow the City Traffic Impact Analysis Preparation Guide dated August 2012.

Case No. APN 246-070-017 / 246-070-002 / 246-040-027 / 246-040-026

Related Cases -

SP No. _____

EIR No. _____

GPA No. _____

CZ No. _____

Project Name: 6055 Center Street Warehouse Project

Project Location: 6055 Center Street

Project Description: 308,000 square feet of Manufacturing

Consultant

Name: Kunzman Associates, Inc.

Address: 1111 W Town & Country Road, Ste. 34

Orange, CA 92868

Telephone: (714) 973-8383

Developer

MIG I HOGLE-IRELAND

1500 Iowa Avenue, Suite 110

Riverside, CA 92507

(9051) 787-9222

A. Trip Generation Source: ITE Trip Generation Manual, most recent edition

Existing Land Use

Vacant

Existing Zoning

BMP

Total Daily Trips

1,576

Proposed Land Use

Manufacturing

Proposed Zoning

BMP

	In	Out	Total
AM Trips	<u>236</u>	<u>65</u>	<u>301</u>
PM Trips	<u>109</u>	<u>194</u>	<u>303</u>

Internal Trip

☐

Yes

☒

No

(

% Trip Discount)

Allowance

Pass-By Trip Allowance

☐

Yes

☒

No

(

_____ % Trip Discount)

(Attach additional sheet if this is a multi-use site with a breakdown of trips generated)

B. Trip Geographic Distribution: N % S % E % W %
(See attached exhibit for detailed assignment)

C. Background Traffic

Project Completion Year: 2017

Annual Ambient Growth Rate: 2.0 %

Other area projects to be included: To be included when data provided.

Please contact Planning Division or use the most recently provided data

Model/Forecast methodology if required _____

D. Study intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

- | | |
|----------|-----------|
| 1. _____ | 5. _____ |
| 2. _____ | 6. _____ |
| 3. _____ | 7. _____ |
| 4. _____ | 8. _____ |
| | 9. _____ |
| | 10. _____ |
| | 11. _____ |

E. Study Roadway Segments (For GP level study):

- | | |
|----------|----------|
| 1. _____ | 5. _____ |
| 2. _____ | 6. _____ |
| 3. _____ | 7. _____ |
| 4. _____ | 8. _____ |

F. Other Jurisdictional Impacts

Is this project within any other Agency's Sphere of Influence or one-mile radius of boundaries? ☒ Yes ☐ No

If so, name of Jurisdiction: _____
Cities of Jurupa Valley, Rialto, Colton, and Grand Terrace

G. Site Plan (please attach a legible 11'X17' copy)

H. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by Public Works Traffic Department)

Recommended by:

Bryan Crawford
Consultant's Representative

12/7/15
Date

Scoping Agreement Submitted on

12/7/15
Date

Scoping Agreement Resubmitted on

Date

Approved Scoping Agreement:

City of Riverside
Traffic Engineering Division

Date

cc: Planning Division
Land Development Section

Table 1

Project Trip Generation

Descriptor	Quantity	Units ²	Type of Vehicle					Total
			Passenger Car	2 Axle Truck	3 Axle Truck	4+ Axle Truck	Total Trucks	
Land Use: Manufacturing	308.000	TSF	74.4%	8.4%	4.6%	12.6%	25.6%	100%
Traffic Generation Rates in trips per TSF								
Daily			2.842	0.321	0.176	0.481	0.978	3.82
Morning Peak Hour			0.543	0.061	0.034	0.092	0.187	0.73
Evening Peak Hour			0.543	0.061	0.034	0.092	0.187	0.73
Traffic Generation in Vehicles								
Daily			875	99	54	148	301	1,176
Morning Peak Hour								
Inbound			131	15	8	22	45	176
Outbound			37	4	2	6	12	49
Total			168	19	10	28	57	225
Evening Peak Hour								
Inbound			60	7	4	10	21	81
Outbound			108	12	7	18	37	145
Total			168	19	11	28	58	226
Passenger Car Equivalent's (PCE'S) Factor ³			1.00	1.50	2.00	3.00		
Traffic Generation in PCE's								
Daily			875	149	108	444	701	1,576
Morning Peak Hour								
Inbound			131	23	16	66	105	236
Outbound			37	6	4	18	28	65
Total			168	29	20	84	133	301
Evening Peak Hour								
Inbound			60	11	8	30	49	109
Outbound			108	18	14	54	86	194
Total			168	29	22	84	135	303

¹ Source: Institute of Transportation Engineers, Trip Generation, 9th Edition, 2012, Land Use Category 140 and Truck Trip Generation Study, City of Fontana, August 2003.

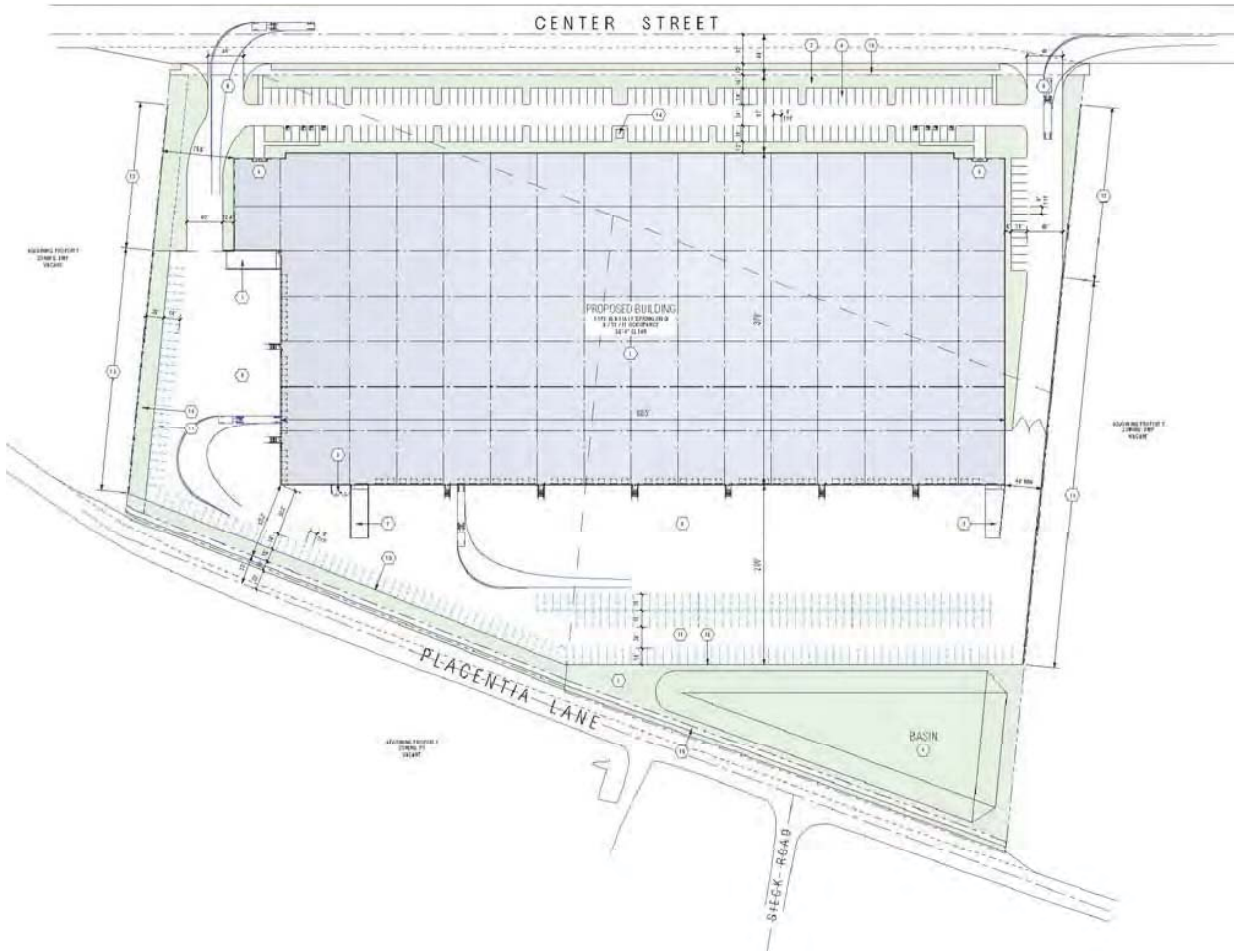
² TSF = Thousand Square Feet

³ Passenger Car Equivalent factors are recommended by San Bernardino Associated Governments.

Figure 1
Project Location Map



Figure 2
Site Plan



KUNZMAN ASSOCIATES, INC.

OVER 35 YEARS OF EXCELLENT SERVICE

6055a/2

Figure 3
Project Outbound Trip Distribution - Cars



Figure 4
Project Inbound Trip Distribution - Cars



6055a/4

KUNZMAN ASSOCIATES, INC.

OVER 35 YEARS OF EXCELLENT SERVICE

Figure 5
Project Outbound Trip Distribution - Trucks



Figure 6
Project Inbound Trip Distribution - Trucks



6055a/6

APPENDIX C

Traffic Count Worksheets

Planning Commission - Exhibit 1 - Development Review Committee Staff Report
Development Review Committee - Exhibit 7 - CEQA Documents

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

PROJECT #: SC0789
LOCATION #: 1
CONTROL: STOP W

CONTROL: STOP W

CONTROL: STOP W

AM		▲	
PM		N	
MD	◀ W		E ▶
OTHER		S	
OTHER		▼	

 Add U-Turns to Left Turns

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	

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INTERSECTION TURNING MOVEMENT COUNTS

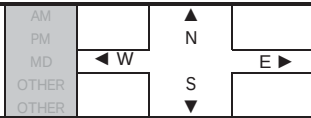
PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:
Thu, Dec 10, 15

LOCATION:
NORTH & SOUTH: Riverside
EAST & WEST: Orange
Center

PROJECT #: SC0789
LOCATION #: 2
CONTROL: STOP ALL

NOTES:



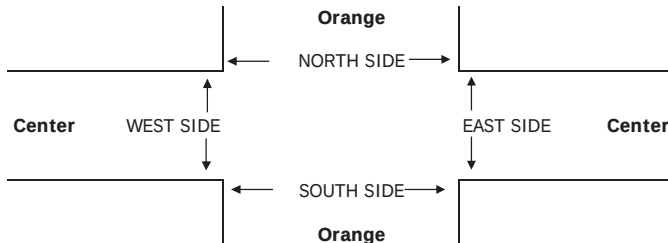
☒ Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	Orange			Orange			Center			Center			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1	0	0	1	0	0	1	0	0	1	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

AM	7:00 AM	1	0	6	1	0	2	0	29	0	7	30	3	79
	7:15 AM	3	0	15	0	0	0	1	27	0	18	31	0	95
	7:30 AM	1	1	15	2	0	0	4	22	0	12	37	2	96
	7:45 AM	7	0	14	1	0	0	1	26	2	20	36	5	112
	8:00 AM	1	0	10	0	0	0	2	31	3	15	30	1	93
	8:15 AM	2	1	14	4	0	2	0	29	2	18	27	0	99
	8:30 AM	1	0	9	2	0	1	3	36	1	15	45	5	118
	8:45 AM	4	0	14	2	0	1	1	33	3	12	44	1	115
	VOLUMES	20	2	97	12	0	6	12	233	11	117	280	17	807
	APPROACH %	17%	2%	82%	67%	0%	33%	5%	91%	4%	28%	68%	4%	
PM	APP/DEPART	119	/	31	18	/	128	256	/	342	414	/	306	0
	BEGIN PEAK HR	8:00 AM												
	VOLUMES	8	1	47	8	0	4	6	129	9	60	146	7	425
	APPROACH %	14%	2%	84%	67%	0%	33%	4%	90%	6%	28%	69%	3%	
	PEAK HR FACTOR	0.778			0.500			0.900			0.819			0.900
	APP/DEPART	56	/	14	12	/	69	144	/	184	213	/	158	0
	4:00 PM	4	1	37	3	0	0	1	61	3	17	30	0	157
	4:15 PM	2	0	40	4	2	1	2	55	1	14	27	3	151
	4:30 PM	3	0	30	9	5	1	0	73	1	24	29	4	179
	4:45 PM	2	0	26	2	0	0	0	47	3	13	22	0	115
PM	5:00 PM	2	0	28	2	0	0	0	56	9	15	31	1	144
	5:15 PM	2	1	27	2	0	1	1	50	2	23	34	1	144
	5:30 PM	5	0	24	3	0	0	0	45	3	22	34	0	136
	5:45 PM	3	1	23	0	0	1	0	40	0	15	30	0	113
	VOLUMES	23	3	235	25	7	4	4	427	22	143	237	9	1,139
	APPROACH %	9%	1%	90%	69%	19%	11%	1%	94%	5%	37%	61%	2%	
	APP/DEPART	261	/	16	36	/	172	453	/	687	389	/	264	0
	BEGIN PEAK HR	4:00 PM												
	VOLUMES	11	1	133	18	7	2	3	236	8	68	108	7	602
	APPROACH %	8%	1%	92%	67%	26%	7%	1%	96%	3%	37%	59%	4%	
	PEAK HR FACTOR	0.863			0.450			0.834			0.803			0.841
	APP/DEPART	145	/	11	27	/	83	247	/	387	183	/	121	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0



AM	7:00 AM	0	0	0	0	0
	7:15 AM	0	0	0	0	0
	7:30 AM	0	0	0	0	0
	7:45 AM	0	0	0	0	0
	8:00 AM	0	0	0	0	0
	8:15 AM	0	0	0	0	0
	8:30 AM	0	0	0	0	0
	8:45 AM	0	0	0	0	0
	TOTAL	0	0	0	0	0
	4:00 PM	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0
	4:30 PM	0	0	0	0	0
	4:45 PM	0	0	0	0	0
	5:00 PM	0	0	0	0	0
	5:15 PM	0	0	0	0	0
	5:30 PM	0	0	0	0	0
	5:45 PM	0	0	0	0	0
	TOTAL	0	0	0	0	0

PEDESTRIAN + BIKE CROSSINGS					
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0

PEDESTRIAN CROSSINGS					
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0

BICYCLE CROSSINGS					
NS	SS	ES	WS	TOTAL	
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0

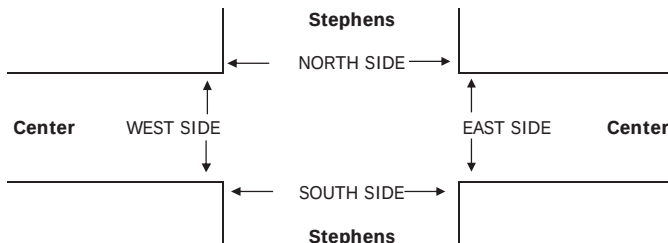
PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

PROJECT #: SC0789
LOCATION #: 3
CONTROL: SIGNAL

AM		▲	
PM		N	
MD	◀ W		E ▶
OTHER		S	
OTHER		▼	

 Add U-Turns to Left Turns

U-TURNS				
NB 0	SB 0	EB 0	WB 0	TTL

[illegible][illegible][illegible][illegible]

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

PROJECT #: SC0789
LOCATION #: 4
CONTROL: STOP ALL

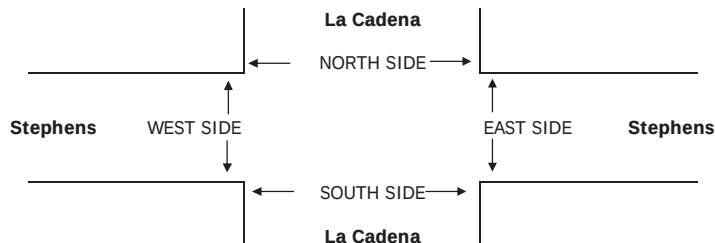
AM		▲	
PM		N	
MD	◀ W		E ▶
OTHER		S	
OTHER		▼	

 Add U-Turns to Left Turns

U-TURNS				
NB 0	SB 0	EB 0	WB 0	TTL

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	2	2

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
1	0	0	1	2

[illegible]

INTERSECTION TURNING MOVEMENT COUNTS

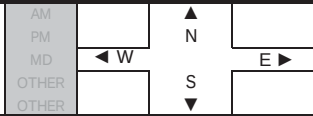
PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:
Thu, Dec 10, 15

LOCATION:
NORTH & SOUTH: Riverside
EAST & WEST: La Cadena
Highgrove

PROJECT #: SC0789
LOCATION #: 5
CONTROL: STOP ALL

NOTES:

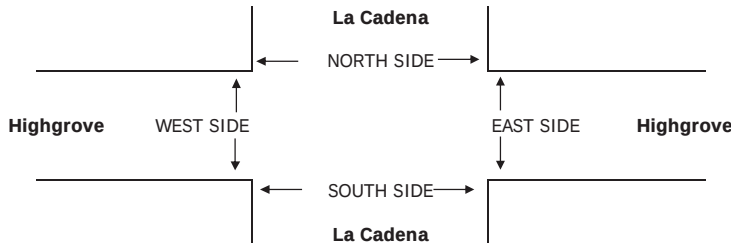


☒ Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	La Cadena			La Cadena			Highgrove			Highgrove			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	X	1	0	0	1	X	0	1	0	0	X	1	
7:00 AM	0	3	8	0	9	0	19	53	0	4	0	1	97
7:15 AM	0	10	9	0	21	0	10	32	0	5	0	2	89
7:30 AM	0	9	11	0	22	0	8	33	0	9	0	0	92
7:45 AM	0	10	10	0	25	0	8	44	0	11	0	1	109
8:00 AM	0	10	9	0	16	0	3	31	0	9	0	1	79
8:15 AM	0	8	2	0	19	0	7	26	0	5	0	1	68
8:30 AM	0	7	6	0	23	0	6	42	0	8	0	1	93
8:45 AM	0	10	7	2	17	0	11	48	0	4	0	0	99
VOLUMES	0	67	62	2	152	0	72	309	0	55	0	7	726
APPROACH %	0%	52%	48%	1%	99%	0%	19%	81%	0%	89%	0%	11%	
APP/DEPART	129	/	146	154	/	207	381	/	373	62	/	0	0
BEGIN PEAK HR	7:00 AM												
VOLUMES	0	32	38	0	77	0	45	162	0	29	0	4	387
APPROACH %	0%	46%	54%	0%	100%	0%	22%	78%	0%	88%	0%	12%	
PEAK HR FACTOR	0.875			0.770			0.719			0.688			0.888
APP/DEPART	70	/	81	77	/	106	207	/	200	33	/	0	0
4:00 PM	0	21	13	0	33	0	11	41	0	2	0	4	125
4:15 PM	0	17	12	0	27	0	13	41	1	7	0	1	119
4:30 PM	0	9	14	0	33	0	5	50	0	6	0	0	117
4:45 PM	0	11	18	0	20	0	11	47	0	7	0	0	114
5:00 PM	0	24	17	0	28	0	5	57	0	5	0	1	137
5:15 PM	0	27	21	0	45	0	7	47	2	6	0	2	157
5:30 PM	0	24	15	1	42	0	7	51	0	4	0	0	144
5:45 PM	0	19	12	0	38	0	7	55	1	4	0	0	136
VOLUMES	0	152	122	1	266	0	66	389	4	41	0	8	1,049
APPROACH %	0%	55%	45%	0%	100%	0%	14%	85%	1%	84%	0%	16%	
APP/DEPART	274	/	226	267	/	311	459	/	512	49	/	0	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	0	94	65	1	153	0	26	210	3	19	0	3	574
APPROACH %	0%	59%	41%	1%	99%	0%	11%	88%	1%	86%	0%	14%	
PEAK HR FACTOR	0.828			0.856			0.948			0.688			0.914
APP/DEPART	159	/	123	154	/	175	239	/	276	22	/	0	0

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0



AM	7:00 AM
	7:15 AM
	7:30 AM
	7:45 AM
	8:00 AM
	8:15 AM
	8:30 AM
	8:45 AM
	TOTAL
PM	4:00 PM
	4:15 PM
	4:30 PM
	4:45 PM
	5:00 PM
	5:15 PM
	5:30 PM
	5:45 PM
	TOTAL

PEDESTRIAN + BIKE CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

PEDESTRIAN CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

BICYCLE CROSSINGS				
NS	SS	ES	WS	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

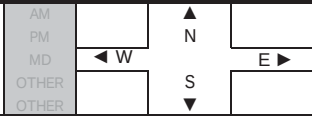
PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:
Thu, Dec 10, 15

LOCATION: Riverside
NORTH & SOUTH: Highgrove
EAST & WEST: Center

PROJECT #: SC0789
LOCATION #: 6
CONTROL: STOP N/S

NOTES:



☒ Add U-Turns to Left Turns

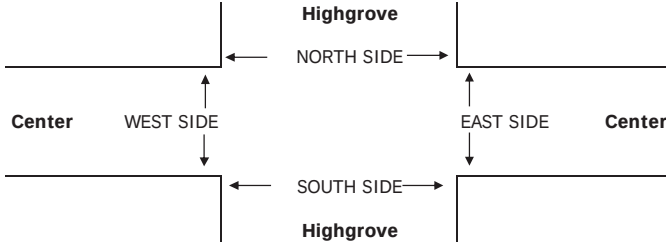
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	Highgrove			Highgrove			Center			Center			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1	1	0	1	0	0	1	1	0	1	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	

AM	7:00 AM	10	0	45	2	0	2	1	49	5	0	69	1	184
	7:15 AM	7	0	37	0	0	6	0	57	6	2	119	1	235
	7:30 AM	12	0	33	0	1	9	0	51	2	5	117	3	233
	7:45 AM	21	0	36	0	0	5	0	48	9	4	83	0	206
	8:00 AM	13	0	29	1	0	5	0	39	7	4	69	0	167
	8:15 AM	12	0	21	1	0	3	0	41	5	2	58	1	144
	8:30 AM	21	0	22	0	0	1	0	41	5	4	56	0	150
	8:45 AM	21	0	34	0	0	2	0	46	4	0	53	0	160
	VOLUMES	117	0	257	4	1	33	1	372	43	21	624	6	1,479
	APPROACH %	31%	0%	69%	11%	3%	87%	0%	89%	10%	3%	96%	1%	
PM	APP/DEPART	374	/	7	38	/	65	416	/	633	651	/	774	0
	BEGIN PEAK HR	7:00 AM												
	VOLUMES	50	0	151	2	1	22	1	205	22	11	388	5	858
	APPROACH %	25%	0%	75%	8%	4%	88%	0%	90%	10%	3%	96%	1%	
	PEAK HR FACTOR	0.882												
	APP/DEPART	201	/	6	25	/	34	228	/	358	404	/	460	0
	BEGIN PEAK HR	4:45 PM												
	VOLUMES	90	3	418	6	2	43	4	520	29	15	422	13	1,565
	APPROACH %	18%	1%	82%	12%	4%	84%	1%	94%	5%	3%	94%	3%	
	APP/DEPART	511	/	20	51	/	46	553	/	944	450	/	555	0
PM	BEGIN PEAK HR	4:45 PM												
	VOLUMES	50	2	229	5	1	18	2	253	15	8	228	9	820
	APPROACH %	18%	1%	81%	21%	4%	75%	1%	94%	6%	3%	93%	4%	
	PEAK HR FACTOR	0.901												
	APP/DEPART	281	/	13	24	/	24	270	/	487	245	/	296	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0



AM	7:00 AM	0	0	0	0	0
	7:15 AM	0	0	0	0	0
	7:30 AM	0	0	0	0	0
	7:45 AM	0	0	0	0	0
	8:00 AM	0	0	0	0	0
	8:15 AM	0	0	0	0	0
	8:30 AM	0	0	0	0	0
	8:45 AM	0	0	0	0	0
	TOTAL	0	0	0	0	0
	4:00 PM	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0
	4:30 PM	0	0	0	0	0
	4:45 PM	0	0	0	0	0
	5:00 PM	0	0	0	0	0
	5:15 PM	0	0	0	0	0
	5:30 PM	0	0	0	0	0
	5:45 PM	0	0	0	0	0
	TOTAL	0	0	0	0	0

PEDESTRIAN + BIKE CROSSINGS					
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	

PEDESTRIAN CROSSINGS					
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	

BICYCLE CROSSINGS					
NS	SS	ES	WS	TOTAL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
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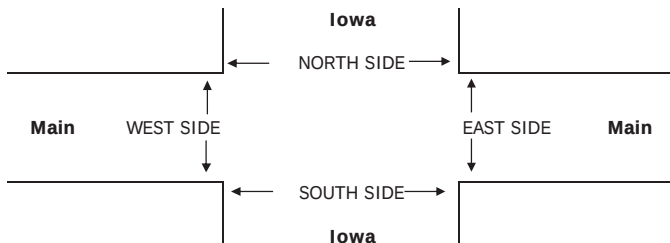
PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

PROJECT #: SC0789
LOCATION #: 8
CONTROL: SIGNAL

AM		▲	
PM		N	
MD	◀ W		E ▶
OTHER		S	
OTHER		▼	

 Add U-Turns to Left Turns

U-TURNS				
NB 0	SB 0	EB 0	WB 0	TTL

[illegible][illegible][illegible][illegible][illegible]

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

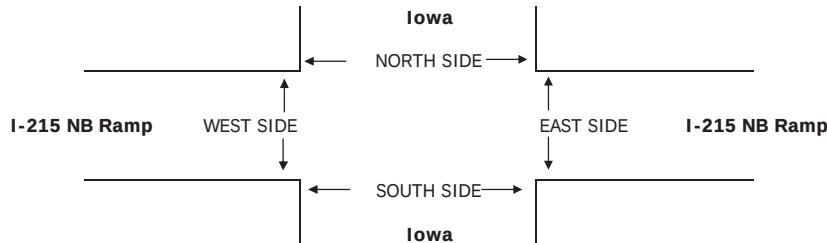
PROJECT #: SC0789
LOCATION #: 9
CONTROL: SIGNAL

AM		▲	
PM		N	
MD	◀ W		E ▶
OTHER		S	
OTHER		▼	

 Add U-Turns to Left Turns

U-TURNS				
NB 0	SB 0	EB 0	WB 0	TTL

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1

[illegible][illegible][illegible][illegible]

APPENDIX D

**Explanation and Calculation of
Intersection Delay**

Planning Commission - Exhibit 1 - Development Review Committee Staff Report
Development Review Committee - Exhibit 7 - CEQA Documents

EXPLANATION AND CALCULATION OF INTERSECTION LEVEL OF SERVICE USING DELAY METHODOLOGY

The levels of service at the unsignalized and signalized intersections are calculated using the delay methodology in the 2010 Highway Capacity Manual. This methodology views an intersection as consisting of several lane groups. A lane group is a set of lanes serving a movement. If there are two northbound left turn lanes, then the lane group serving the northbound left turn movement has two lanes. Similarly, there may be three lanes in the lane group serving the northbound through movement, one lane in the lane group serving the northbound right turn movement, and so forth. It is also possible for one lane to serve two lane groups. A shared lane might result in there being 1.5 lanes in the northbound left turn lane group and 2.5 lanes in the northbound through lane group.

For each lane group, there is a capacity. That capacity is calculated by multiplying the number of lanes in the lane group times a theoretical maximum lane capacity per lane times 12 adjustment factors.

Each of the 12 adjustment factors has a value of approximately 1.00. A value less than 1.00 is generally assigned when a less than desirable condition occurs.

The 12 adjustment factors are as follows:

1. Peak hour factor (to account for peaking within the peak hour)
2. Lane utilization factor (to account for not all lanes loading equally)
3. Lane width
4. Percent of heavy trucks
5. Approach grade
6. Parking
7. Bus stops at intersections
8. Area type (CBD or other)
9. Right turns
10. Left turns

11. Pedestrian activity
12. Signal progression

The maximum theoretical lane capacity and the 12 adjustment factors for it are all unknowns for which approximate estimates have been recommended in the 2010 Highway Capacity Manual. For the most part, the recommended values are not based on statistical analysis but rather on educated estimates. However, it is possible to use the delay method and get reasonable results as will be discussed below.

Once the lane group volume is known and the lane group capacity is known, a volume to capacity ratio can be calculated for the lane group.

With a volume to capacity ratio calculated, average delay per vehicle in a lane group can be estimated. The average delay per vehicle in a lane group is calculated using a complex formula provided by the 2010 Highway Capacity Manual, which can be simplified and described as follows:

Delay per vehicle in a lane group is a function of the following:

1. Cycle length
2. Amount of red time faced by a lane group
3. Amount of yellow time for that lane group
4. The volume to capacity ratio of the lane group

The average delay per vehicle for each lane group is calculated, and eventually an overall average delay for all vehicles entering the intersection is calculated. This average delay per vehicle is then used to judge Level of Service. The Level of Services are defined in the table that follows this discussion.

Experience has shown that when a maximum lane capacity of 1,900 vehicles per hour is used (as recommended in the 2010 Highway Capacity Manual), little or no yellow time penalty is used, and none of the 12 penalty factors are applied, calculated delay is realistic. The delay calculation for instance assumes that yellow time is totally unused. Yet experience shows that most of the yellow time is used.

An idiosyncrasy of the delay methodology is that it is possible to add traffic to an intersection and reduce the average total delay per vehicle. If the average total delay is 30 seconds per vehicle for all vehicles traveling through an intersection, and traffic is

added to a movement that has an average total delay of 15 seconds per vehicle, then the overall average total delay is reduced.

The delay calculation for a lane group is based on a concept that the delay is a function of the amount of unused capacity available. As the volume approaches capacity and there is no more unused capacity available, then the delay rapidly increases. Delay is not proportional to volume, but rather increases rapidly as the unused capacity approaches zero.

Because delay is not linearly related to volumes, the delay does not reflect how close an intersection is to overloading. If an intersection is operating at Level of Service C and has an average total delay of 2 seconds per vehicle, you know very little as to what percent the traffic can increase before Level of Service E is reached.

LEVEL OF SERVICE DESCRIPTION¹

Level of Service	Description	Average Total Delay Per Vehicle (Seconds)	
		Signalized	Unsignalized
A	Level of Service A occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0 to 10.00	0 to 10.00
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average total delay.	10.01 to 20.00	10.01 to 15.00
C	Level of Service C generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	20.01 to 35.00	15.01 to 25.00
D	Level of Service D generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.01 to 55.00	25.01 to 35.00
E	Level of Service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	55.01 to 80.00	35.01 to 50.00
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	80.01 and up	50.01 and up

¹ Source: Highway Capacity Manual Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 2000.

Existing

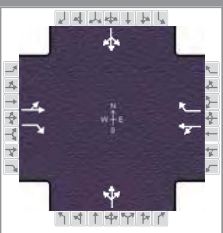
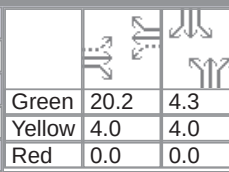
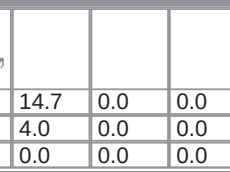
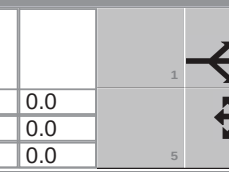
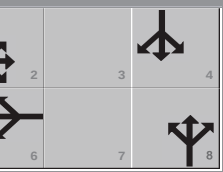
TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Main Street/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	Existing		
Analysis Time Period	Morning Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Main Street/Riverside Avenue			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		633	35	76	645		
Peak-Hour Factor, PHF	1.00	0.95	0.95	0.95	0.95	1.00	
Hourly Flow Rate, HFR (veh/h)	0	666	36	80	678	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Two Way Left Turn Lane						
RT Channelized			0			0	
Lanes	0	2	1	1	2	0	
Configuration		T	R	L	T		
Upstream Signal		0			0		
Minor Street	Eastbound			Westbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)				33	0	103	
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.95	1.00	0.95	
Hourly Flow Rate, HFR (veh/h)	0	0	0	34	0	108	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	1	0	
Configuration					LTR		
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration		L		LTR			
v (veh/h)		80		142			
C (m) (veh/h)		905		542			
v/c		0.09		0.26			
95% queue length		0.29		1.04			
Control Delay (s/veh)		9.4		14.0			
LOS		A		B			
Approach Delay (s/veh)	--	--	14.0				
Approach LOS	--	--	B				

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Main Street/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	Existing		
Analysis Time Period	Evening Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Main Street/Riverside Avenue			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		717	96	141	832		
Peak-Hour Factor, PHF	1.00	0.93	0.93	0.93	0.93	1.00	
Hourly Flow Rate, HFR (veh/h)	0	770	103	151	894	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Two Way Left Turn Lane						
RT Channelized			0			0	
Lanes	0	2	1	1	2	0	
Configuration		T	R	L	T		
Upstream Signal		0			0		
Minor Street	Eastbound			Westbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)				21	0	105	
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.93	1.00	0.93	
Hourly Flow Rate, HFR (veh/h)	0	0	0	22	0	112	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	1	0	
Configuration					LTR		
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration		L		LTR			
v (veh/h)		151		134			
C (m) (veh/h)		781		496			
v/c		0.19		0.27			
95% queue length		0.71		1.08			
Control Delay (s/veh)		10.7		14.9			
LOS		B		B			
Approach Delay (s/veh)	--	--	14.9				
Approach LOS	--	--	B				

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	BC				Intersection	Orange Street/Center Street			
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside			
Date Performed	1/18/2016				Analysis Year	Existing			
Analysis Time Period	Morning Peak Hour								
Project ID Center Street Warehouse									
East/West Street: Center Street					North/South Street: Orange Street				
Volume Adjustments and Site Characteristics									
Approach	Eastbound				Westbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	6	129	9		60	146	7		
%Thrus Left Lane									
Approach	Northbound				Southbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	8	1	47		8	1	4		
%Thrus Left Lane									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LTR		LTR		LTR		LTR		
PHF	0.90		0.90		0.90		0.90		
Flow Rate (veh/h)	159		235		61		13		
% Heavy Vehicles	0		0		0		0		
No. Lanes	1		1		1		1		
Geometry Group	1		1		1		1		
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.0		0.3		0.1		0.6		
Prop. Right-Turns	0.1		0.0		0.9		0.3		
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0		
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	
hadj, computed	-0.0		0.0		-0.5		-0.1		
Departure Headway and Service Time									
hd, initial value (s)	3.20		3.20		3.20		3.20		
x, initial	0.14		0.21		0.05		0.01		
hd, final value (s)	4.29		4.28		4.30		4.79		
x, final value	0.19		0.28		0.07		0.02		
Move-up time, m (s)	2.0		2.0		2.0		2.0		
Service Time, t _s (s)	2.3		2.3		2.3		2.8		
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity (veh/h)	409		485		311		263		
Delay (s/veh)	8.28		8.92		7.64		7.87		
LOS	A		A		A		A		
Approach: Delay (s/veh)	8.28		8.92		7.64		7.87		
LOS	A		A		A		A		
Intersection Delay (s/veh)	8.51								
Intersection LOS	A								

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	BC				Intersection	Orange Street/Center Street			
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside			
Date Performed	1/18/2016				Analysis Year	Existing			
Analysis Time Period	Evening Peak Hour								
Project ID Center Street Warehouse									
East/West Street: Center Street					North/South Street: Orange Street				
Volume Adjustments and Site Characteristics									
Approach	Eastbound				Westbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	3	236	8		68	108	7		
%Thrus Left Lane									
Approach	Northbound				Southbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	11	1	133		18	7	2		
%Thrus Left Lane									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LTR		LTR		LTR		LTR		
PHF	0.84		0.84		0.84		0.84		
Flow Rate (veh/h)	292		216		172		31		
% Heavy Vehicles	0		0		0		0		
No. Lanes	1		1		1		1		
Geometry Group	1		1		1		1		
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.0		0.4		0.1		0.7		
Prop. Right-Turns	0.0		0.0		0.9		0.1		
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0		
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	
hadj, computed	-0.0		0.1		-0.5		0.1		
Departure Headway and Service Time									
hd, initial value (s)	3.20		3.20		3.20		3.20		
x, initial	0.26		0.19		0.15		0.03		
hd, final value (s)	4.67		4.83		4.64		5.49		
x, final value	0.38		0.29		0.22		0.05		
Move-up time, m (s)	2.0		2.0		2.0		2.0		
Service Time, t _s (s)	2.7		2.8		2.6		3.5		
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity (veh/h)	542		466		422		281		
Delay (s/veh)	10.50		9.79		8.96		8.77		
LOS	B		A		A		A		
Approach: Delay (s/veh)	10.50		9.79		8.96		8.77		
LOS	B		A		A		A		
Intersection Delay (s/veh)	9.83								
Intersection LOS	A								

HCS 2010 Signalized Intersection Results Summary

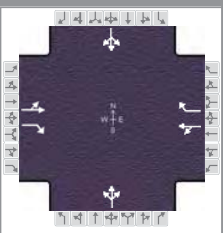
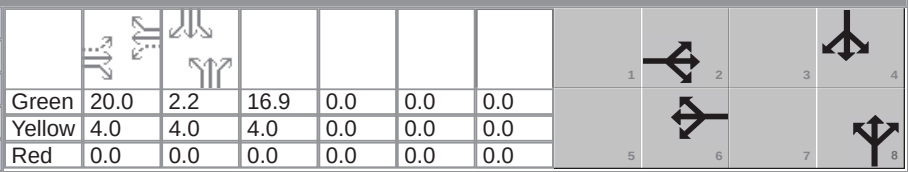
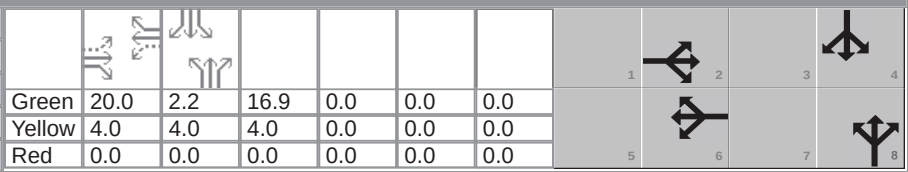
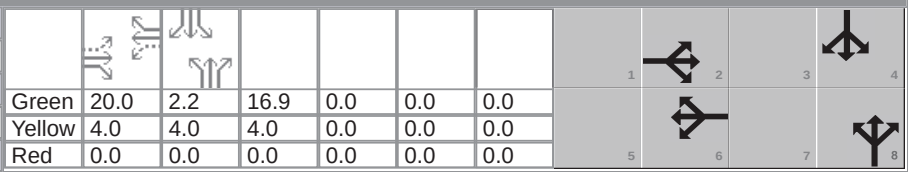
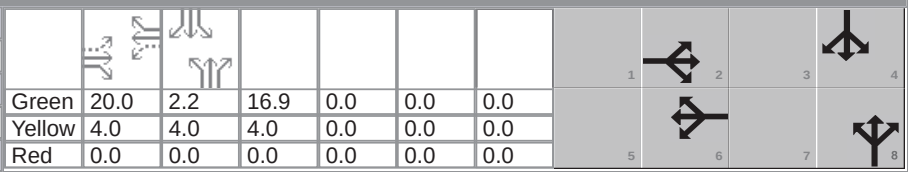
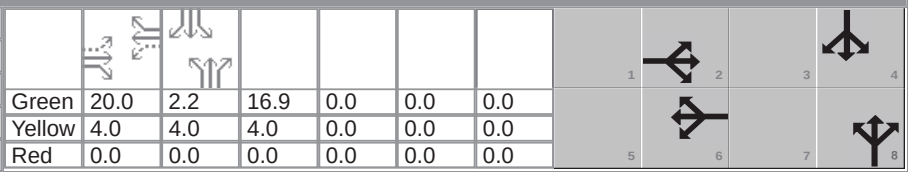
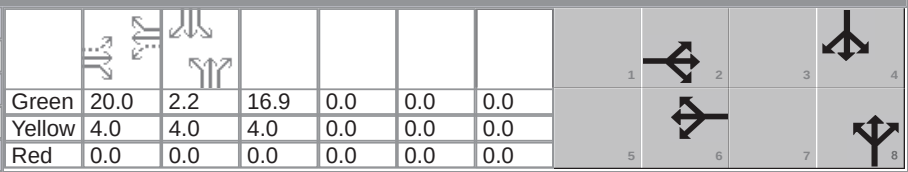
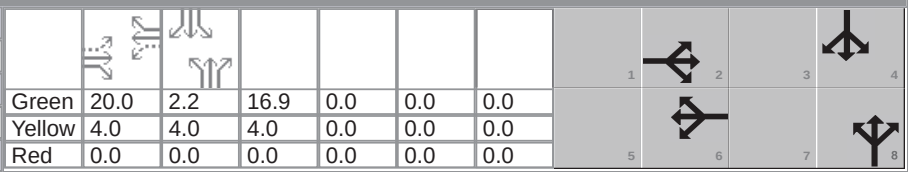
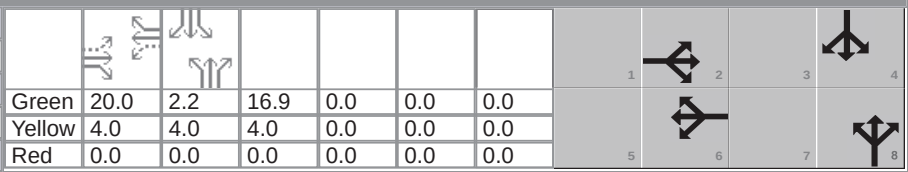
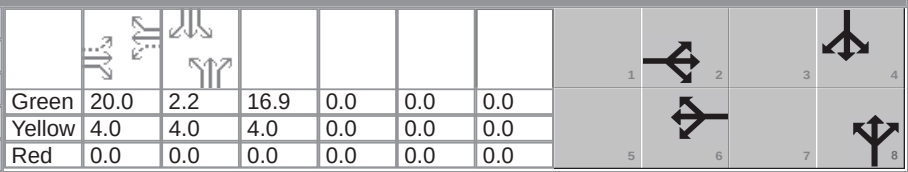
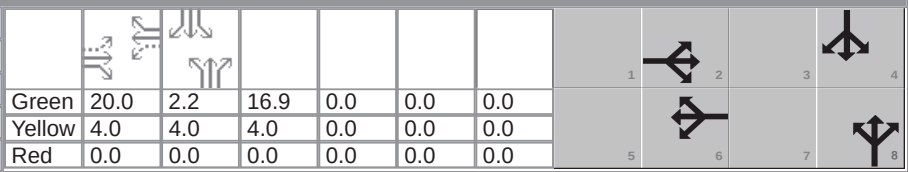
General Information						Intersection Information											
Agency	Kunzman Associates, Inc.					Duration, h		0.25									
Analyst	BC	Analysis Date		1/18/2016		Area Type		Other									
Jurisdiction	Riverside	Time Period		Morning Peak Hour		PHF		0.91									
Intersection	Stephens Avenue/Center S	Analysis Year		Existing		Analysis Period		1> 7:00									
File Name	AME5.xus																
Project Description	Center Street Warehouse																
Demand Information																	
Approach Movement		EB			WB			NB			SB						
		L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h		1	114	66	303	155	7	58	2	100	9	10	1				
Signal Information																	
Cycle, s	51.2	Reference Phase	2														
Offset, s	0	Reference Point	End														
Uncoordinated	Yes	Simult. Gap E/W	On														
Force Mode	Fixed	Simult. Gap N/S	On														
Timer Results																	
Assigned Phase		EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
				2				6				8				4	
Case Number				7.0				7.0				12.0				12.0	
Phase Duration, s				24.2				24.2				18.7				8.3	
Change Period, (Y+Rc), s				4.0				4.0				4.0				4.0	
Max Allow Headway (MAH), s				3.2				3.2				3.3				3.1	
Queue Clearance Time (gs), s				4.2				18.6				6.3				2.6	
Green Extension Time (ge), s				1.5				1.5				0.3				0.0	
Phase Call Probability				1.00				1.00				0.92				0.27	
Max Out Probability				0.00				0.00				0.00				0.00	
Movement Group Results																	
Approach Movement		EB			WB			NB			SB						
		L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement		5	2	12	1	6	16	3	8	18	7	4	14				
Adjusted Flow Rate (v), veh/h			126	73		503	8		176			22					
Adjusted Saturation Flow Rate (s), veh/h/ln			1899	1610		1444	1610		1680			1842					
Queue Service Time (gs), s			0.0	1.5		14.5	0.1		4.3			0.6					
Cycle Queue Clearance Time (gc), s			2.2	1.5		16.6	0.1		4.3			0.6					
Green Ratio (g/C)			0.39	0.39		0.39	0.39		0.29			0.08					
Capacity (c), veh/h			820	636		686	636		482			156					
Volume-to-Capacity Ratio (X)			0.154	0.114		0.733	0.012		0.365			0.141					
Available Capacity (ca), veh/h			2653	2196		2085	2196		982			1077					
Back of Queue (Q), veh/ln (50th percentile)			0.8	0.4		4.4	0.0		1.4			0.2					
Queue Storage Ratio (RQ) (50th percentile)			0.00	0.00		0.00	0.00		0.00			0.00					
Uniform Delay (d1), s/veh			10.1	9.8		14.4	9.4		14.6			21.8					
Incremental Delay (d2), s/veh			0.0	0.0		0.6	0.0		0.2			0.2					
Initial Queue Delay (d3), s/veh			0.0	0.0		0.0	0.0		0.0			0.0					
Control Delay (d), s/veh			10.1	9.9		15.0	9.4		14.7			21.9					
Level of Service (LOS)			B	A		B	A		B			C					
Approach Delay, s/veh / LOS		10.0	B		14.9	B		14.7	B		21.9	C					
Intersection Delay, s/veh / LOS		14.0						B									
Multimodal Results																	
Pedestrian LOS Score / LOS		2.1	B		2.1	B		2.3	B		2.3	B					
Bicycle LOS Score / LOS		0.8	A		1.3	A		0.8	A		0.5	A					

Planning Commission - Exhibit 1 - Development Review Committee Staff Report

Development Review Committee - Exhibit 7 - CEQA Documents

Attachment 3 - City Planning Commission Report and Exhibits - April 05, 2018

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information											
Agency	Kunzman Associates, Inc.					Duration, h		0.25									
Analyst	BC	Analysis Date		1/18/2016		Area Type		Other									
Jurisdiction	Riverside	Time Period		Evening Peak Hour		PHF		0.93									
Intersection	Stephens Avenue/Center S	Analysis Year		Existing		Analysis Period		1> 7:00									
File Name	PME5.xus																
Project Description	Center Street Warehouse																
Demand Information																	
Approach Movement		EB			WB			NB			SB						
		L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h		6	243	132	187	119	9	80	5	58	3	3	2				
Signal Information																	
Cycle, s	51.0	Reference Phase	2														
Offset, s	0	Reference Point	End														
Uncoordinated	Yes	Simult. Gap E/W	On														
Force Mode	Fixed	Simult. Gap N/S	On														
Timer Results		EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase				2				6				8				4	
Case Number				7.0				7.0				12.0				12.0	
Phase Duration, s				24.0				24.0				20.9				6.2	
Change Period, (Y+Rc), s				4.0				4.0				4.0				4.0	
Max Allow Headway (MAH), s				3.3				3.3				3.2				3.1	
Queue Clearance Time (gs), s				7.1				11.5				5.3				2.2	
Green Extension Time (ge), s				1.6				1.6				0.3				0.0	
Phase Call Probability				1.00				1.00				0.89				0.11	
Max Out Probability				0.00				0.00				0.00				0.00	
Movement Group Results																	
Approach Movement		EB			WB			NB			SB						
		L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement		5	2	12	1	6	16	3	8	18	7	4	14				
Adjusted Flow Rate (v), veh/h			268	142		329	10		154			9					
Adjusted Saturation Flow Rate (s), veh/h/ln			1895	1610		1376	1610		1726			1786					
Queue Service Time (gs), s			0.0	3.0		4.4	0.2		3.3			0.2					
Cycle Queue Clearance Time (gc), s			5.1	3.0		9.5	0.2		3.3			0.2					
Green Ratio (g/C)			0.39	0.39		0.39	0.39		0.33			0.04					
Capacity (c), veh/h			814	631		653	631		570			77					
Volume-to-Capacity Ratio (X)			0.329	0.225		0.504	0.015		0.270			0.112					
Available Capacity (ca), veh/h			2654	2207		1971	2207		1014			1049					
Back of Queue (Q), veh/ln (50th percentile)			1.7	0.9		2.4	0.1		1.1			0.1					
Queue Storage Ratio (RQ) (50th percentile)			0.00	0.00		0.00	0.00		0.00			0.00					
Uniform Delay (d1), s/veh			11.0	10.4		12.2	9.5		12.6			23.5					
Incremental Delay (d2), s/veh			0.1	0.1		0.2	0.0		0.1			0.2					
Initial Queue Delay (d3), s/veh			0.0	0.0		0.0	0.0		0.0			0.0					
Control Delay (d), s/veh			11.1	10.4		12.4	9.5		12.7			23.7					
Level of Service (LOS)			B	B		B	A		B			C					
Approach Delay, s/veh / LOS		10.9	B		12.3	B		12.7	B		23.7	C					
Intersection Delay, s/veh / LOS		11.8						B									
Multimodal Results																	
Pedestrian LOS Score / LOS		2.1	B		2.1	B		2.3	B		2.3	B					
Bicycle LOS Score / LOS		1.2	A		1.0	A		0.7	A		0.5	A					

Planning Commission - Exhibit 1 - Development Review Committee Staff Report

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Development Review Committee - Exhibit 7 - CEQA Documents

Attachment 3 - City Planning Commission Report and Exhibits - April 05, 2018

ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	La Cadena/Stephens-I-215 SB		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	Existing		
Analysis Time Period	Morning Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Stephens Avenue/I-215 FWY SB					North/South Street: La Cadena Drive			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	39	253	58		173	95	9	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	31	61	11		42	170	34	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LT	R	LT	R
PHF	0.95		0.95		0.95	0.95	0.95	0.95
Flow Rate (veh/h)	368		291		96	11	222	35
% Heavy Vehicles	0		0		0	0	0	0
No. Lanes	1		1		2		2	
Geometry Group	2		2		5		5	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.1		0.6		0.3	0.0	0.2	0.0
Prop. Right-Turns	0.2		0.0		0.0	1.0	0.0	1.0
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		0.1		0.2	-0.7	0.1	-0.7
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20	3.20	3.20	3.20
x, initial	0.33		0.26		0.09	0.01	0.20	0.03
hd, final value (s)	5.52		5.82		7.15	6.25	6.74	5.92
x, final value	0.56		0.47		0.19	0.02	0.42	0.06
Move-up time, m (s)	2.0		2.0		2.3		2.3	
Service Time, t _s (s)	3.5		3.8		4.8	4.0	4.4	3.6
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	618		541		346	261	472	285
Delay (s/veh)	15.45		13.89		11.52	9.08	14.15	8.98
LOS	C		B		B	A	B	A
Approach: Delay (s/veh)	15.45		13.89		11.27		13.45	
LOS	C		B		B		B	
Intersection Delay (s/veh)	14.06							
Intersection LOS	B							

ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	La Cadena/Stephens-I-215 SB		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	Existing		
Analysis Time Period	Evening Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Stephens Avenue/I-215 FWY SB					North/South Street: La Cadena Drive			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	57	162	63		84	62	5	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	30	152	15		65	352	47	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LT	R	LT	R
PHF	0.96		0.96		0.96	0.96	0.96	0.96
Flow Rate (veh/h)	292		156		189	15	433	48
% Heavy Vehicles	0		0		0	0	0	0
No. Lanes	1		1		2		2	
Geometry Group	2		2		5		5	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.2		0.6		0.2	0.0	0.2	0.0
Prop. Right-Turns	0.2		0.0		0.0	1.0	0.0	1.0
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		0.1		0.1	-0.7	0.1	-0.7
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20	3.20	3.20	3.20
x, initial	0.26		0.14		0.17	0.01	0.38	0.04
hd, final value (s)	6.26		6.80		7.01	6.21	6.50	5.71
x, final value	0.51		0.29		0.37	0.03	0.78	0.08
Move-up time, m (s)	2.0		2.0		2.3		2.3	
Service Time, t _s (s)	4.3		4.8		4.7	3.9	4.2	3.4
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	532		406		439	265	542	298
Delay (s/veh)	15.56		12.62		13.73	9.07	28.70	8.88
LOS	C		B		B	A	D	A
Approach: Delay (s/veh)	15.56		12.62		13.39		26.72	
LOS	C		B		B		D	
Intersection Delay (s/veh)	19.50							
Intersection LOS	C							

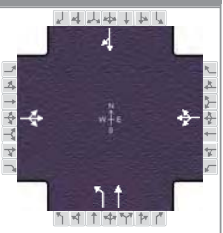
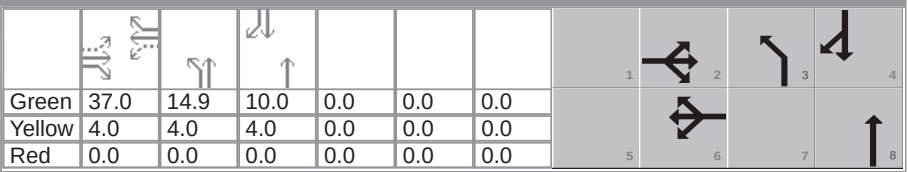
ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	BC				Intersection	La Cadena/Highgrove-I-215 NB			
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside			
Date Performed	1/18/2016				Analysis Year	Existing			
Analysis Time Period	Morning Peak Hour								
Project ID Center Street Warehouse									
East/West Street: Highgrove Place/I-215 FWY NB					North/South Street: La Cadena Drive				
Volume Adjustments and Site Characteristics									
Approach	Eastbound				Westbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	45	162	0		29	0	4		
%Thrus Left Lane									
Approach	Northbound				Southbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	0	32	38		1	77	0		
%Thrus Left Lane									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LT		L	R	TR		LT		
PHF	0.89		0.89	0.89	0.89		0.89		
Flow Rate (veh/h)	232		32	4	77		87		
% Heavy Vehicles	0		0	0	0		0		
No. Lanes	1		2		1		1		
Geometry Group	4a		5		2		2		
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.2		1.0	0.0	0.0		0.0		
Prop. Right-Turns	0.0		0.0	1.0	0.5		0.0		
Prop. Heavy Vehicle	0.0		0.0	0.0	0.0		0.0		
hLT-adj	0.2	0.2	0.5	0.5	0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	
hadj, computed	0.0		0.5	-0.7	-0.3		0.0		
Departure Headway and Service Time									
hd, initial value (s)	3.20		3.20	3.20	3.20		3.20		
x, initial	0.21		0.03	0.00	0.07		0.08		
hd, final value (s)	4.49		5.59	4.38	4.32		4.63		
x, final value	0.29		0.05	0.00	0.09		0.11		
Move-up time, m (s)	2.0		2.3		2.0		2.0		
Service Time, t _s (s)	2.5		3.3	2.1	2.3		2.6		
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity (veh/h)	482		282	254	327		337		
Delay (s/veh)	9.30		8.58	7.11	7.76		8.21		
LOS	A		A	A	A		A		
Approach: Delay (s/veh)	9.30		8.42		7.76		8.21		
LOS	A		A		A		A		
Intersection Delay (s/veh)	8.73								
Intersection LOS	A								

ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	La Cadena/Highgrove-I-215 NB		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	Existing		
Analysis Time Period	Evening Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Highgrove Place/I-215 FWY NB					North/South Street: La Cadena Drive			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	26	210	0		19	0	3	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	0	94	65		1	153	0	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LT		L	R	TR		LT	
PHF	0.91		0.91	0.91	0.91		0.91	
Flow Rate (veh/h)	258		20	3	174		169	
% Heavy Vehicles	0		0	0	0		0	
No. Lanes	1		2		1		1	
Geometry Group	4a		5		2		2	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.1		1.0	0.0	0.0		0.0	
Prop. Right-Turns	0.0		0.0	1.0	0.4		0.0	
Prop. Heavy Vehicle	0.0		0.0	0.0	0.0		0.0	
hLT-adj	0.2	0.2	0.5	0.5	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.0		0.5	-0.7	-0.2		0.0	
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20	3.20	3.20		3.20	
x, initial	0.23		0.02	0.00	0.15		0.15	
hd, final value (s)	4.91		6.16	4.95	4.61		4.85	
x, final value	0.35		0.03	0.00	0.22		0.23	
Move-up time, m (s)	2.0		2.3		2.0		2.0	
Service Time, t _s (s)	2.9		3.9	2.6	2.6		2.9	
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	508		270	253	424		419	
Delay (s/veh)	10.56		9.08	7.67	8.93		9.28	
LOS	B		A	A	A		A	
Approach: Delay (s/veh)	10.56		8.89		8.93		9.28	
LOS	B		A		A		A	
Intersection Delay (s/veh)	9.70							
Intersection LOS	A							

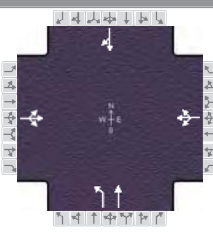
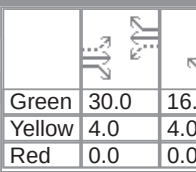
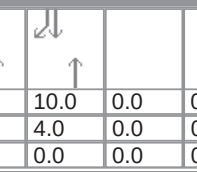
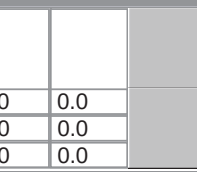
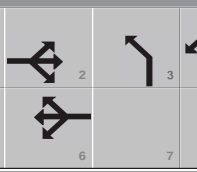
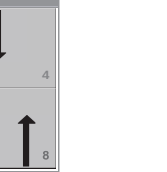
TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Highgrove Place/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	Existing		
Analysis Time Period	Morning Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Highgrove Place			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	1	205	0	11	388	5	
Peak-Hour Factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	
Hourly Flow Rate, HFR (veh/h)	1	225	0	12	426	5	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	LT		R	LTR			
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	50	1	151	2	1	22	
Peak-Hour Factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	
Hourly Flow Rate, HFR (veh/h)	54	1	165	2	1	24	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	LT		R		LTR		
Delay, Queue Length, and Level of Service							
Approach	Eastbound	Westbound	Northbound			Southbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration	LT	LTR	LT		R		LTR
v (veh/h)	1	12	55		165		27
C (m) (veh/h)	1139	1356	343		819		556
v/c	0.00	0.01	0.16		0.20		0.05
95% queue length	0.00	0.03	0.56		0.75		0.15
Control Delay (s/veh)	8.2	7.7	17.5		10.5		11.8
LOS	A	A	C		B		B
Approach Delay (s/veh)	--	--	12.2			11.8	
Approach LOS	--	--	B			B	

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Highgrove Place/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	Existing		
Analysis Time Period	Evening Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Highgrove Place			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	2	253	0	8	228	9	
Peak-Hour Factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	
Hourly Flow Rate, HFR (veh/h)	2	263	0	8	237	9	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	LT		R	LTR			
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	50	2	229	5	1	18	
Peak-Hour Factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	
Hourly Flow Rate, HFR (veh/h)	52	2	238	5	1	18	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	LT		R		LTR		
Delay, Queue Length, and Level of Service							
Approach	Eastbound	Westbound	Northbound			Southbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration	LT	LTR	LT		R		LTR
v (veh/h)	2	8	54		238		24
C (m) (veh/h)	1332	1313	446		781		553
v/c	0.00	0.01	0.12		0.30		0.04
95% queue length	0.00	0.02	0.41		1.29		0.14
Control Delay (s/veh)	7.7	7.8	14.2		11.6		11.8
LOS	A	A	B		B		B
Approach Delay (s/veh)	--	--	12.1			11.8	
Approach LOS	--	--	B			B	

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information											
Agency	Kunzman Associates, Inc.					Duration, h		0.25									
Analyst	BC	Analysis Date		1/18/2016		Area Type		Other									
Jurisdiction	Riverside	Time Period		Morning Peak Hour		PHF		0.90									
Intersection	Iowa Avenue-I-215 NB Rar	Analysis Year		Existing		Analysis Period		1> 7:00									
File Name	AME9.xus																
Project Description	Center Street Warehouse																
Demand Information																	
Approach Movement		EB			WB			NB			SB						
		L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h		91	0	773	0	0	0	284	440			13	232				
Signal Information																	
Cycle, s	73.9	Reference Phase	2														
Offset, s	0	Reference Point	End														
Uncoordinated	Yes	Simult. Gap E/W	On														
Force Mode	Fixed	Simult. Gap N/S	On														
				Green	37.0	14.9	10.0	0.0	0.0	0.0							
				Yellow	4.0	4.0	4.0	0.0	0.0	0.0							
				Red	0.0	0.0	0.0	0.0	0.0	0.0							
Timer Results																	
Assigned Phase		EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
				2				6		3		8				4	
Case Number				8.0				8.0		2.0		4.0				8.3	
Phase Duration, s				41.0				41.0		18.9		32.9				14.0	
Change Period, (Y+R _c), s				4.0				4.0		4.0		4.0				4.0	
Max Allow Headway (MAH), s				3.3				0.0		3.1		3.1				3.1	
Queue Clearance Time (g _s), s				39.0						14.5		17.6				12.0	
Green Extension Time (g _e), s				0.0				0.0		0.5		1.5				0.0	
Phase Call Probability				1.00						1.00		1.00				1.00	
Max Out Probability				1.00						0.00		0.00				1.00	
Movement Group Results																	
Approach Movement		EB			WB			NB			SB						
		L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement		5	2	12	1	6	16	3	8			4	14				
Adjusted Flow Rate (v), veh/h		960			0			316	489		272						
Adjusted Saturation Flow Rate (s), veh/h/ln		1600			0			1810	1900		1623						
Queue Service Time (g _s), s		29.5			0.0			12.5	15.6		10.0						
Cycle Queue Clearance Time (g _c), s		37.0			0.0			12.5	15.6		10.0						
Green Ratio (g/C)		0.50						0.20	0.39		0.14						
Capacity (c), veh/h		855						365	743		220						
Volume-to-Capacity Ratio (X)		1.123			0.000			0.865	0.658		1.239						
Available Capacity (c _a), veh/h		855						612	1028		220						
Back of Queue (Q), veh/ln (50th percentile)		29.9			0.0			5.4	6.3		12.3						
Queue Storage Ratio (RQ) (50th percentile)		0.00			0.00			0.00	0.00		0.00						
Uniform Delay (d ₁), s/veh		19.5						28.5	18.4		32.0						
Incremental Delay (d ₂), s/veh		70.5			0.0			3.3	0.4		140.3						
Initial Queue Delay (d ₃), s/veh		0.0			0.0			0.0	0.0		0.0						
Control Delay (d), s/veh		90.1						31.8	18.8		172.2						
Level of Service (LOS)		F						C	B		F						
Approach Delay, s/veh / LOS		90.1		F		0.0				23.9		C		172.2		F	
Intersection Delay, s/veh / LOS		74.9						E									
Multimodal Results																	
Pedestrian LOS Score / LOS		EB			WB			NB			SB						
		2.2			B			2.1			B						
Bicycle LOS Score / LOS		2.1			B			0.5			A						

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information															
Agency	Kunzman Associates, Inc.				Duration, h		0.25													
Analyst	BC	Analysis Date		1/18/2016		Area Type		Other												
Jurisdiction	Riverside	Time Period		Evening Peak Hour		PHF		0.88												
Intersection	Iowa Avenue-I-215 NB Rar	Analysis Year		Existing		Analysis Period		1> 7:00												
File Name	PME9.xus																			
Project Description	Center Street Warehouse																			
Demand Information					EB			WB			NB			SB						
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h					121	0	764	0	0	0	327	548			21	317				
Signal Information																				
Cycle, s	68.0	Reference Phase	2																	
Offset, s	0	Reference Point	End																	
Uncoordinated	Yes	Simult. Gap E/W	On																	
Force Mode	Fixed	Simult. Gap N/S	On																	
					Green	30.0	16.0	10.0	0.0	0.0	0.0									
					Yellow	4.0	4.0	4.0	0.0	0.0	0.0									
					Red	0.0	0.0	0.0	0.0	0.0	0.0									
Timer Results					EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase							2				6		3		8				4	
Case Number							8.0				8.0		2.0		4.0				8.3	
Phase Duration, s							34.0				34.0		20.0		34.0				14.0	
Change Period, (Y+R _c), s							4.0				4.0		4.0		4.0				4.0	
Max Allow Headway (MAH), s							3.3				0.0		3.1		3.1				3.1	
Queue Clearance Time (g _s), s							32.0						15.4		20.5				12.0	
Green Extension Time (g _e), s							0.0				0.0		0.6		2.2				0.0	
Phase Call Probability							1.00						1.00		1.00				1.00	
Max Out Probability							1.00						0.01		0.01				1.00	
Movement Group Results					EB			WB			NB			SB						
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement					5	2	12	1	6	16	3	8			4	14				
Adjusted Flow Rate (v), veh/h					1006			0			372 623			384						
Adjusted Saturation Flow Rate (s), veh/h/ln					1593			0			1810 1900			1626						
Queue Service Time (g _s), s					25.7			0.0			13.4 18.5			10.0						
Cycle Queue Clearance Time (g _c), s					30.0			0.0			13.4 18.5			10.0						
Green Ratio (g/C)					0.44						0.24 0.44			0.15						
Capacity (c), veh/h					763						425 838			239						
Volume-to-Capacity Ratio (X)					1.318			0.000			0.874 0.743			1.606						
Available Capacity (c _a), veh/h					763						666 1118			239						
Back of Queue (Q), veh/ln (50th percentile)					43.1			0.0			5.9 7.1			23.0						
Queue Storage Ratio (RQ) (50th percentile)					0.00			0.00			0.00 0.00			0.00						
Uniform Delay (d ₁), s/veh					20.1						25.0 15.8			29.0						
Incremental Delay (d ₂), s/veh					152.1			0.0			5.0 1.1			291.4						
Initial Queue Delay (d ₃), s/veh					0.0			0.0			0.0 0.0			0.0						
Control Delay (d), s/veh					172.2						30.1 16.9			320.4						
Level of Service (LOS)					F						C B			F						
Approach Delay, s/veh / LOS					172.2		F		0.0				21.8		C		320.4		F	
Intersection Delay, s/veh / LOS					133.4							F								
Multimodal Results					EB			WB			NB			SB						
Pedestrian LOS Score / LOS					2.3 B			2.1 B			2.1 B			2.1 B						
Bicycle LOS Score / LOS					2.1 B			0.5 A			2.1 B			1.1 A						

Planning Commission - Exhibit 1 - Development Review Committee Staff Report

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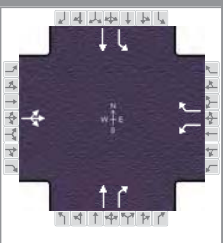
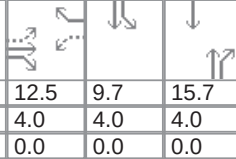
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Development Review Committee - Exhibit 7 - CEQA Documents

Attachment 3 - City Planning Commission Report and Exhibits - April 05, 2018

HCS 2010 Signalized Intersection Results Summary

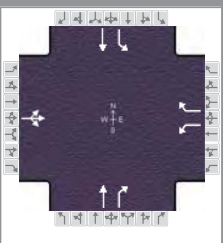
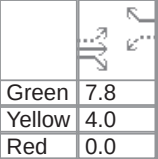
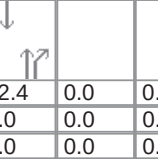
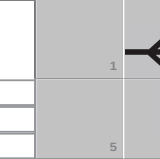
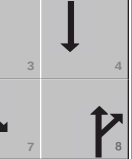
General Information						Intersection Information									
Agency	Kunzman Associates, Inc.					Duration, h	0.25								
Analyst	BC	Analysis Date	1/18/2016			Area Type	Other								
Jurisdiction	Riverside	Time Period	Morning Peak Hour			PHF	0.82								
Intersection	Iowa Avenue/Main Street	Analysis Year	Existing			Analysis Period	1> 7:00								
File Name	AME10.xus														
Project Description	Center Street Warehouse														
Demand Information															
Approach Movement			L	T	R	L	T	R	L	T	R	L	T	R	
Demand (v), veh/h			0	0	0	103		268		429	0	216	592		
Signal Information															
Cycle, s	50.0	Reference Phase	2												
Offset, s	0	Reference Point	End		Green	12.5	9.7	15.7	0.0	0.0	0.0				
Uncoordinated	Yes	Simult. Gap E/W	On		Yellow	4.0	4.0	4.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On		Red	0.0	0.0	0.0	0.0	0.0	0.0				
Timer Results															
Assigned Phase			EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT					
Case Number				8.0		5.0		7.3		2.0		4.0			
Phase Duration, s				16.5		16.5		19.7		13.7		33.4			
Change Period, (Y+Rc), s				4.0		4.0		4.0		4.0		4.0			
Max Allow Headway (MAH), s				0.0		3.3		3.0		3.1		3.0			
Queue Clearance Time (gs), s						11.5		15.0		8.9		14.6			
Green Extension Time (ge), s				0.0		1.0		0.6		0.3		1.6			
Phase Call Probability						1.00		1.00		0.97		1.00			
Max Out Probability						0.00		0.59		0.07		0.53			
Movement Group Results															
Approach Movement			L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement			5	2	12	1		16		8	18	7	4		
Adjusted Flow Rate (v), veh/h				0		126		327		523	0	263	722		
Adjusted Saturation Flow Rate (s), veh/h/ln				0		1810		1610		1900	1610	1810	1900		
Queue Service Time (gs), s				0.0		2.8		9.5		13.0	0.0	6.9	12.6		
Cycle Queue Clearance Time (gc), s				0.0		2.8		9.5		13.0	0.0	6.9	12.6		
Green Ratio (g/C)						0.25		0.25		0.31	0.31	0.20	0.59		
Capacity (c), veh/h						598		404		597	506	353	1119		
Volume-to-Capacity Ratio (X)				0.000		0.210		0.809		0.876	0.000	0.747	0.645		
Available Capacity (ca), veh/h						1591		1288		760	644	543	1119		
Back of Queue (Q), veh/ln (50th percentile)				0.0		1.0		3.1		6.0	0.0	2.6	3.3		
Queue Storage Ratio (RQ) (50th percentile)				0.00		0.00		0.00		0.00	0.00	0.00	0.00		
Uniform Delay (di), s/veh						15.1		17.6		16.2	0.0	19.0	6.8		
Incremental Delay (d2), s/veh				0.0		0.1		1.5		8.0	0.0	1.2	1.0		
Initial Queue Delay (d3), s/veh				0.0		0.0		0.0		0.0	0.0	0.0	0.0		
Control Delay (d), s/veh						15.1		19.1		24.2	0.0	20.2	7.8		
Level of Service (LOS)						B		B		C		C	A		
Approach Delay, s/veh / LOS			0.0			18.0		B	24.2		C	11.1		B	
Intersection Delay, s/veh / LOS			16.2						B						
Multimodal Results															
Pedestrian LOS Score / LOS			2.3	B	2.3	B	2.3	B	1.3	A					
Bicycle LOS Score / LOS			0.5	A		F	1.4	A	2.1	B					

Planning Commission - Exhibit 1 - Development Review Committee Staff Report

Development Review Committee - Exhibit 7 - CEQA Documents

Attachment 3 - City Planning Commission Report and Exhibits - April 05, 2018

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information								
Agency	Kunzman Associates, Inc.					Duration, h	0.25							
Analyst	BC	Analysis Date	1/18/2016			Area Type	Other							
Jurisdiction	Riverside	Time Period	Evening Peak Hour			PHF	0.95							
Intersection	Iowa Avenue/Main Street	Analysis Year	Existing			Analysis Period	1> 7:00							
File Name	PME10.xus													
Project Description	Center Street Warehouse													
Demand Information														
Approach Movement			EB			WB			NB			SB		
			L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h			0	0	0	112		164		731	0	113	676	
Signal Information								Cycle, s		51.2	Reference Phase	2		
Offset, s		0	Reference Point					End						
Uncoordinated	Yes	Simult. Gap E/W	On					Green	7.8	9.0	22.4	0.0	0.0	0.0
								Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On					Red	0.0	0.0	0.0	0.0	0.0	0.0
Timer Results														
Assigned Phase			EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Case Number				2		6		8	7	4				
Phase Duration, s				8.0		5.0		7.3	2.0	4.0				
Change Period, (Y+Rc), s				11.8		11.8		26.4	13.0	39.4				
Max Allow Headway (MAH), s				4.0		4.0		4.0	4.0	4.0				
Queue Clearance Time (gs), s				0.0		3.2		3.0	3.1	3.0				
Green Extension Time (ge), s						7.2		21.6	5.0	11.5				
Phase Call Probability						1.00		1.00	0.82	1.00				
Max Out Probability						0.00		0.93	0.00	0.31				
Movement Group Results														
Approach Movement			EB			WB			NB			SB		
			L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement			5	2	12	1		16		8	18	7	4	
Adjusted Flow Rate (v), veh/h				0		118		173		769	0	119	712	
Adjusted Saturation Flow Rate (s), veh/h/ln				0		1810		1610		1900	1610	1810	1900	
Queue Service Time (gs), s				0.0		3.0		5.2		19.6	0.0	3.0	9.5	
Cycle Queue Clearance Time (gc), s				0.0		3.0		5.2		19.6	0.0	3.0	9.5	
Green Ratio (g/C)						0.15		0.15		0.44	0.44	0.18	0.69	
Capacity (c), veh/h						416		246		832	705	318	1314	
Volume-to-Capacity Ratio (X)				0.000		0.283		0.703		0.925	0.000	0.374	0.542	
Available Capacity (ca), veh/h						1553		1257		927	786	530	1314	
Back of Queue (Q), veh/ln (50th percentile)				0.0		1.1		1.8		9.4	0.0	1.1	1.6	
Queue Storage Ratio (RQ) (50th percentile)				0.00		0.00		0.00		0.00	0.00	0.00	0.00	
Uniform Delay (di), s/veh						19.7		20.6		13.6	0.0	18.6	3.9	
Incremental Delay (d2), s/veh				0.0		0.1		1.4		13.2	0.0	0.3	0.3	
Initial Queue Delay (d3), s/veh				0.0		0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (d), s/veh						19.8		22.0		26.8	0.0	18.9	4.2	
Level of Service (LOS)						B		C		C		B	A	
Approach Delay, s/veh / LOS			0.0			21.1		C		26.8		C		
Intersection Delay, s/veh / LOS			16.9						B					
Multimodal Results														
Pedestrian LOS Score / LOS			EB			WB			NB			SB		
			2.3		B	2.3		B	2.2		B	1.3		A
Bicycle LOS Score / LOS			0.5		A			F	1.8		A	1.9		A

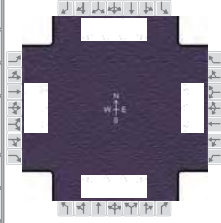
Planning Commission - Exhibit 1 - Development Review Committee Staff Report

Development Review Committee - Exhibit 7 - CEQA Documents

Attachment 3 - City Planning Commission Report and Exhibits - April 05, 2018

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information					
Agency	Kunzman Associates, Inc.					Duration, h		0.25			
Analyst	BC	Analysis Date		1/18/2016		Area Type		Other			
Jurisdiction	Riverside	Time Period		Morning Peak Hour		PHF		0.90			
Intersection	Iowa Avenue/Center Street	Analysis Year		Existing		Analysis Period		1> 7:00			
File Name	AME11.xus										
Project Description	Center Street Warehouse										



Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				82	182	74	126	255	55	66	333	79	28	555	82

Signal Information												
Cycle, s	51.9	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On	Green	6.6	1.2	9.2	3.3	2.6	12.9		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	0.0	4.0	4.0	0.0	4.0		
				Red	0.0	0.0	0.0	0.0	0.0	0.0		

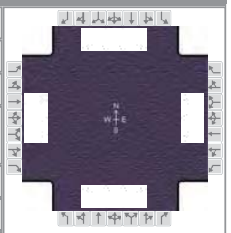
Timer Results		EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		5	2	1	6	3	8	7	4
Case Number		2.0	4.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s		10.6	13.2	11.8	14.5	9.9	19.5	7.3	16.9
Change Period, (Y+R _c), s		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (MAH), s		3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Queue Clearance Time (g _s), s		4.4	5.7	5.7	9.3	3.9	6.1	2.9	10.0
Green Extension Time (g _e), s		0.1	1.1	0.2	1.2	0.1	2.6	0.0	2.8
Phase Call Probability		0.73	1.00	0.87	1.00	0.65	1.00	0.36	1.00
Max Out Probability		0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00

Movement Group Results		EB			WB			NB			SB		
Approach Movement		L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		91	146	139	140	283	61	73	370	88	31	617	91
Adjusted Saturation Flow Rate (s), veh/h/ln		1810	1900	1717	1810	1900	1610	1810	1809	1610	1810	1809	1610
Queue Service Time (g _s), s		2.4	3.6	3.7	3.7	7.3	1.6	1.9	4.1	2.1	0.9	8.0	2.3
Cycle Queue Clearance Time (g _c), s		2.4	3.6	3.7	3.7	7.3	1.6	1.9	4.1	2.1	0.9	8.0	2.3
Green Ratio (g/C)		0.13	0.18	0.18	0.15	0.20	0.20	0.11	0.30	0.30	0.06	0.25	0.25
Capacity (c), veh/h		230	339	307	273	384	325	206	1083	482	114	900	401
Volume-to-Capacity Ratio (X)		0.395	0.430	0.452	0.513	0.738	0.188	0.356	0.342	0.182	0.272	0.685	0.227
Available Capacity (c _a), veh/h		696	731	661	696	1462	1239	696	1392	620	696	2785	1239
Back of Queue (Q), veh/ln (50th percentile)		0.9	1.4	1.3	1.4	2.9	0.5	0.8	1.5	0.7	0.3	2.9	0.8
Queue Storage Ratio (RQ) (50th percentile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d ₁), s/veh		20.8	19.0	19.1	20.3	19.4	17.2	21.3	14.2	13.5	23.2	17.7	15.5
Incremental Delay (d ₂), s/veh		0.4	0.3	0.4	0.6	1.1	0.1	0.4	0.1	0.1	0.5	0.3	0.1
Initial Queue Delay (d ₃), s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh		21.2	19.3	19.5	20.9	20.5	17.3	21.7	14.3	13.6	23.7	18.0	15.6
Level of Service (LOS)		C	B	B	C	C	B	C	B	B	C	B	B
Approach Delay, s/veh / LOS		19.8		B		20.2		C		15.2		B	
Intersection Delay, s/veh / LOS		18.1						B					

Multimodal Results		EB			WB			NB			SB		
Pedestrian LOS Score / LOS		2.9	C		2.9	C		2.8	C		2.4	B	
Bicycle LOS Score / LOS		0.8	A		1.3	A		0.9	A		1.1	A	

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information					
Agency	Kunzman Associates, Inc.					Duration, h	0.25				
Analyst	BC	Analysis Date	1/18/2016			Area Type	Other				
Jurisdiction	Riverside	Time Period	Evening Peak Hour			PHF	0.97				
Intersection	Iowa Avenue/Center Street	Analysis Year	Existing			Analysis Period	1> 7:00				
File Name	PME11.xus										
Project Description	Center Street Warehouse										



Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				170	239	78	120	105	24	78	612	67	42	636	54

Signal Information															
Cycle, s	50.5	Reference Phase	2	Green	6.6	0.7	8.0	3.7	1.8	13.8					
Offset, s	0	Reference Point	End	Yellow	4.0	0.0	4.0	4.0	0.0	4.0					
Uncoordinated	Yes	Simult. Gap E/W	On	Red	0.0	0.0	0.0	0.0	0.0	0.0					
Force Mode	Fixed	Simult. Gap N/S	On												

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	4.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	11.3	12.7	10.6	12.0	9.4	19.5	7.7	17.8
Change Period, (Y+R _c), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (MAH), s	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Queue Clearance Time (g _s), s	6.6	6.2	5.2	4.6	4.1	9.4	3.1	10.1
Green Extension Time (g _e), s	0.2	0.7	0.2	0.8	0.1	2.9	0.0	3.6
Phase Call Probability	0.91	1.00	0.82	1.00	0.68	1.00	0.46	1.00
Max Out Probability	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	175	167	159	124	108	25	80	631	69	43	656	56
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1900	1742	1810	1900	1610	1810	1809	1610	1810	1809	1610
Queue Service Time (g _s), s	4.6	4.0	4.2	3.2	2.6	0.7	2.1	7.4	1.6	1.1	8.1	1.3
Cycle Queue Clearance Time (g _c), s	4.6	4.0	4.2	3.2	2.6	0.7	2.1	7.4	1.6	1.1	8.1	1.3
Green Ratio (g/C)	0.14	0.17	0.17	0.13	0.16	0.16	0.11	0.31	0.31	0.07	0.27	0.27
Capacity (c), veh/h	262	328	301	236	301	255	194	1113	495	131	986	439
Volume-to-Capacity Ratio (X)	0.668	0.511	0.530	0.523	0.360	0.097	0.414	0.567	0.139	0.331	0.665	0.127
Available Capacity (c _a), veh/h	716	752	689	716	1504	1274	716	1432	637	716	2863	1274
Back of Queue (Q), veh/ln (50th percentile)	1.8	1.6	1.5	1.3	1.0	0.2	0.8	2.5	0.5	0.5	2.9	0.4
Queue Storage Ratio (RQ) (50th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d ₁), s/veh	20.5	19.0	19.0	20.5	19.0	18.2	21.1	14.7	12.7	22.3	16.3	13.8
Incremental Delay (d ₂), s/veh	1.1	0.5	0.5	0.7	0.3	0.1	0.5	0.2	0.0	0.5	0.3	0.0
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	21.6	19.4	19.6	21.2	19.3	18.2	21.6	14.8	12.7	22.8	16.6	13.9
Level of Service (LOS)	C	B	B	C	B	B	C	B	B	C	B	B
Approach Delay, s/veh / LOS	20.2		C	20.1		C	15.3		B	16.8		B
Intersection Delay, s/veh / LOS	17.4						B					

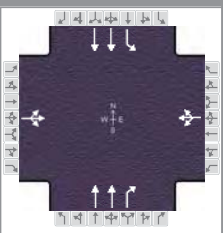
Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.9	C		2.9	C		2.8	C		2.4	B	
Bicycle LOS Score / LOS	0.9	A		0.9	A		1.1	A		1.1	A	

Existing Plus Project

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Main Street/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	Existing Plus Project		
Analysis Time Period	Morning Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Main Street/Riverside Avenue			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		633	61	106	645		
Peak-Hour Factor, PHF	1.00	0.95	0.95	0.95	0.95	1.00	
Hourly Flow Rate, HFR (veh/h)	0	666	64	111	678	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Two Way Left Turn Lane						
RT Channelized			0			0	
Lanes	0	2	1	1	2	0	
Configuration		T	R	L	T		
Upstream Signal		0			0		
Minor Street	Eastbound			Westbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)				40	0	111	
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.95	1.00	0.95	
Hourly Flow Rate, HFR (veh/h)	0	0	0	42	0	116	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	1	0	
Configuration					LTR		
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration		L		LTR			
v (veh/h)		111		158			
C (m) (veh/h)		883		510			
v/c		0.13		0.31			
95% queue length		0.43		1.31			
Control Delay (s/veh)		9.7		15.2			
LOS		A		C			
Approach Delay (s/veh)	--	--	15.2				
Approach LOS	--	--	C				

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Main Street/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	Existing Plus Project		
Analysis Time Period	Evening Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Main Street/Riverside Avenue			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		717	108	155	832		
Peak-Hour Factor, PHF	1.00	0.93	0.93	0.93	0.93	1.00	
Hourly Flow Rate, HFR (veh/h)	0	770	116	166	894	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Two Way Left Turn Lane						
RT Channelized			0			0	
Lanes	0	2	1	1	2	0	
Configuration		T	R	L	T		
Upstream Signal		0			0		
Minor Street	Eastbound			Westbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)				43	0	130	
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.93	1.00	0.93	
Hourly Flow Rate, HFR (veh/h)	0	0	0	46	0	139	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	1	0	
Configuration					LTR		
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration		L		LTR			
v (veh/h)		166		185			
C (m) (veh/h)		773		429			
v/c		0.21		0.43			
95% queue length		0.81		2.13			
Control Delay (s/veh)		10.9		19.6			
LOS		B		C			
Approach Delay (s/veh)	--	--	19.6				
Approach LOS	--	--	C				

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information									
Agency		Kunzman Associates, Inc.				Duration, h		0.25							
Analyst		BC		Analysis Date		1/18/2016		Area Type		Other					
Jurisdiction		Riverside		Time Period		Morning Peak Hour		PHF		0.95					
Intersection		Main Street/Riverside Avenue		Analysis Year		Existing Plus Project		Analysis Period		1> 7:00					
File Name		AMEP11.xus													
Project Description		Center Street Warehouse - With Improvements													
Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				0	0	0	40	0	111		633	61	106	645	
Signal Information															
Cycle, s	51.1	Reference Phase	2												
Offset, s	0	Reference Point	End												
Uncoordinated	Yes	Simult. Gap E/W	On												
Force Mode	Fixed	Simult. Gap N/S	On	Green	14.0	11.1	14.0	0.0	0.0	0.0					
				Yellow	4.0	4.0	4.0	0.0	0.0	0.0					
				Red	0.0	0.0	0.0	0.0	0.0	0.0					
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase					2		6		8	7	4				
Case Number					8.0		8.0		7.3	1.0	4.0				
Phase Duration, s					18.0		18.0		18.0	15.1	33.1				
Change Period, (Y+R _c), s					4.0		4.0		4.0	4.0	4.0				
Max Allow Headway (MAH), s					0.0		3.3		3.0	3.1	3.0				
Queue Clearance Time (g _s), s							5.9		10.4	3.6	7.1				
Green Extension Time (g _e), s					0.0		0.3		3.4	0.2	3.6				
Phase Call Probability							1.00		1.00	0.80	1.00				
Max Out Probability							0.00		0.01	0.00	0.00				
Movement Group Results				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				5	2	12	1	6	16		8	18	7	4	
Adjusted Flow Rate (v), veh/h					0			159			666	64	112	679	
Adjusted Saturation Flow Rate (s), veh/h/ln					0			1602			1809	1610	1810	1809	
Queue Service Time (g _s), s					0.0			0.0			8.4	1.5	1.6	5.1	
Cycle Queue Clearance Time (g _c), s					0.0			3.9			8.4	1.5	1.6	5.1	
Green Ratio (g/C)								0.27			0.27	0.27	0.53	0.57	
Capacity (c), veh/h								528			991	441	621	2061	
Volume-to-Capacity Ratio (X)					0.000			0.301			0.673	0.146	0.180	0.329	
Available Capacity (c _a), veh/h								1016			2122	944	1288	2122	
Back of Queue (Q), veh/ln (50th percentile)					0.0			1.3			3.0	0.5	0.4	1.3	
Queue Storage Ratio (RQ) (50th percentile)					0.00			0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d ₁), s/veh								14.9			16.5	14.0	7.2	5.8	
Incremental Delay (d ₂), s/veh					0.0			0.1			0.3	0.1	0.1	0.0	
Initial Queue Delay (d ₃), s/veh					0.0			0.0			0.0	0.0	0.0	0.0	
Control Delay (d), s/veh								15.0			16.8	14.1	7.3	5.9	
Level of Service (LOS)								B			B	B	A	A	
Approach Delay, s/veh / LOS				0.0			15.0		B	16.6		B	6.1		A
Intersection Delay, s/veh / LOS				11.5						B					
Multimodal Results				EB			WB			NB			SB		
Pedestrian LOS Score / LOS				2.8		C	2.8		C	2.1		B	2.1		B
Bicycle LOS Score / LOS				0.5		A	0.7		A	1.1		A	1.1		A

Planning Commission - Exhibit 1- Development Review Committee Staff Report

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HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information									
Agency		Kunzman Associates, Inc.				Duration, h		0.25							
Analyst		BC		Analysis Date		1/18/2016		Area Type		Other					
Jurisdiction		Riverside		Time Period		Evening Peak Hour		PHF		0.93					
Intersection		Main Street/Riverside Avenue		Analysis Year		Existing Plus Project		Analysis Period		1> 7:00					
File Name		PMEP11.xus													
Project Description		Center Street Warehouse - With Improvements													
Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				0	0	0	43	0	130		717	108	155	832	
Signal Information															
Cycle, s	50.5	Reference Phase	2												
Offset, s	0	Reference Point	End												
Uncoordinated	Yes	Simult. Gap E/W	On												
Force Mode	Fixed	Simult. Gap N/S	On												
Green	12.0	10.8	15.6	0.0	0.0	0.0									
Yellow	4.0	4.0	4.0	0.0	0.0	0.0									
Red	0.0	0.0	0.0	0.0	0.0	0.0									
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase					2		6		8	7	4				
Case Number					8.0		8.0		7.3	1.0	4.0				
Phase Duration, s					16.0		16.0		19.6	14.8	34.5				
Change Period, (Y+R _c), s					4.0		4.0		4.0	4.0	4.0				
Max Allow Headway (MAH), s					0.0		3.3		3.0	3.1	3.0				
Queue Clearance Time (g _s), s							6.9		11.4	4.2	8.6				
Green Extension Time (g _e), s					0.0		0.4		3.7	0.3	4.8				
Phase Call Probability							1.00		1.00	0.90	1.00				
Max Out Probability							0.00		0.05	0.00	0.03				
Movement Group Results				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				5	2	12	1	6	16		8	18	7	4	
Adjusted Flow Rate (v), veh/h					0			186			771	116	167	895	
Adjusted Saturation Flow Rate (s), veh/h/ln					0			1603			1809	1610	1810	1809	
Queue Service Time (g _s), s					0.0			0.6			9.4	2.7	2.2	6.6	
Cycle Queue Clearance Time (g _c), s					0.0			4.9			9.4	2.7	2.2	6.6	
Green Ratio (g/C)								0.24			0.31	0.31	0.56	0.60	
Capacity (c), veh/h								470			1120	498	618	2184	
Volume-to-Capacity Ratio (X)					0.000			0.396			0.689	0.233	0.270	0.410	
Available Capacity (c _a), veh/h								1028			2151	957	1305	2184	
Back of Queue (Q), veh/ln (50th percentile)					0.0			1.6			3.3	0.8	0.6	1.5	
Queue Storage Ratio (RQ) (50th percentile)					0.00			0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d ₁), s/veh								16.5			15.3	13.0	7.0	5.3	
Incremental Delay (d ₂), s/veh					0.0			0.2			0.3	0.1	0.1	0.0	
Initial Queue Delay (d ₃), s/veh					0.0			0.0			0.0	0.0	0.0	0.0	
Control Delay (d), s/veh								16.7			15.6	13.1	7.1	5.3	
Level of Service (LOS)								B			B	B	A	A	
Approach Delay, s/veh / LOS				0.0			16.7		B	15.2		B	5.6		A
Intersection Delay, s/veh / LOS				10.6						B					
Multimodal Results				EB			WB			NB			SB		
Pedestrian LOS Score / LOS				2.8		C	2.8		C	2.1		B	2.0		B
Bicycle LOS Score / LOS				0.5		A	0.8		A	1.2		A	1.1		A

Planning Commission - Exhibit 1- Development Review Committee Staff Report

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TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	BC			Intersection	Project West Acc/Center Street			
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside			
Date Performed	1/18/2016			Analysis Year	Existing Plus Project			
Analysis Time Period	Morning Peak Hour							
Project Description Center Street Warehouse								
East/West Street: Center Street				North/South Street: Project West Access				
Intersection Orientation: East-West				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)		162	38	64	163			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95		
Hourly Flow Rate, HFR (veh/h)	0	170	40	67	171	0		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	1	1	1	0		
Configuration		T	R	L	T			
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	11	0	18					
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95		
Hourly Flow Rate, HFR (veh/h)	11	0	18	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	0	0	0	0		
Configuration		LTR						
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	LTR					
v (veh/h)		67	29					
C (m) (veh/h)		1373	700					
v/c		0.05	0.04					
95% queue length		0.15	0.13					
Control Delay (s/veh)		7.8	10.4					
LOS		A	B					
Approach Delay (s/veh)	--	--	10.4					
Approach LOS	--	--	B					

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	BC			Intersection	Project West Acc/Center Street			
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside			
Date Performed	1/18/2016			Analysis Year	Existing Plus Project			
Analysis Time Period	Evening Peak Hour							
Project Description Center Street Warehouse								
East/West Street: Center Street				North/South Street: Project West Access				
Intersection Orientation: East-West				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)		255	17	30	136			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95		
Hourly Flow Rate, HFR (veh/h)	0	268	17	31	143	0		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	1	1	1	0		
Configuration		T	R	L	T			
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	31	0	53					
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95		
Hourly Flow Rate, HFR (veh/h)	32	0	55	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	0	0	0	0		
Configuration		LTR						
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	LTR					
v (veh/h)		31	87					
C (m) (veh/h)		1289	669					
v/c		0.02	0.13					
95% queue length		0.07	0.45					
Control Delay (s/veh)		7.9	11.2					
LOS		A	B					
Approach Delay (s/veh)	--	--	11.2					
Approach LOS	--	--	B					

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Project East Acc/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	Existing Plus Project		
Analysis Time Period	Morning Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Project East Access			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		162	18	115	222		
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly Flow Rate, HFR (veh/h)	0	170	18	121	233	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	1	1	1	0	
Configuration		T	R	L	T		
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	5	0	32				
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly Flow Rate, HFR (veh/h)	5	0	33	0	0	0	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	0	0	0	0	
Configuration		LTR					
Delay, Queue Length, and Level of Service							
Approach	Eastbound	Westbound	Northbound			Southbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration		L	LTR				
v (veh/h)		121	38				
C (m) (veh/h)		1398	760				
v/c		0.09	0.05				
95% queue length		0.28	0.16				
Control Delay (s/veh)		7.8	10.0				
LOS		A	A				
Approach Delay (s/veh)	--	--	10.0				
Approach LOS	--	--	A				

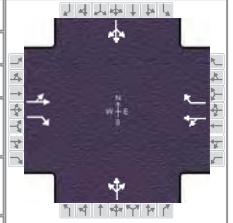
TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Project East Acc/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	Existing Plus Project		
Analysis Time Period	Evening Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Project East Access			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		300	8	53	151		
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly Flow Rate, HFR (veh/h)	0	315	8	55	158	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	1	1	1	0	
Configuration		T	R	L	T		
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	15	0	95				
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly Flow Rate, HFR (veh/h)	15	0	100	0	0	0	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	0	0	0	0	
Configuration		LTR					
Delay, Queue Length, and Level of Service							
Approach	Eastbound	Westbound	Northbound			Southbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration		L	LTR				
v (veh/h)		55	115				
C (m) (veh/h)		1248	677				
v/c		0.04	0.17				
95% queue length		0.14	0.61				
Control Delay (s/veh)		8.0	11.4				
LOS		A	B				
Approach Delay (s/veh)	--	--	11.4				
Approach LOS	--	--	B				

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	BC				Intersection	Orange Street/Center Street			
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside			
Date Performed	1/18/2016				Analysis Year	Existing Plus Project			
Analysis Time Period	Morning Peak Hour								
Project ID Center Street Warehouse									
East/West Street: Center Street					North/South Street: Orange Street				
Volume Adjustments and Site Characteristics									
Approach	Eastbound				Westbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	6	175	13		60	313	7		
%Thrus Left Lane									
Approach	Northbound				Southbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	21	1	47		8	1	4		
%Thrus Left Lane									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LTR		LTR		LTR		LTR		
PHF	0.90		0.90		0.90		0.90		
Flow Rate (veh/h)	214		420		76		13		
% Heavy Vehicles	0		0		0		0		
No. Lanes	1		1		1		1		
Geometry Group	1		1		1		1		
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.0		0.2		0.3		0.6		
Prop. Right-Turns	0.1		0.0		0.7		0.3		
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0		
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	
hadj, computed	-0.0		0.0		-0.4		-0.1		
Departure Headway and Service Time									
hd, initial value (s)	3.20		3.20		3.20		3.20		
x, initial	0.19		0.37		0.07		0.01		
hd, final value (s)	4.56		4.40		5.00		5.40		
x, final value	0.27		0.51		0.11		0.02		
Move-up time, m (s)	2.0		2.0		2.0		2.0		
Service Time, t _s (s)	2.6		2.4		3.0		3.4		
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity (veh/h)	464		670		326		263		
Delay (s/veh)	9.25		11.95		8.59		8.51		
LOS	A		B		A		A		
Approach: Delay (s/veh)	9.25		11.95		8.59		8.51		
LOS	A		B		A		A		
Intersection Delay (s/veh)	10.74								
Intersection LOS	B								

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	BC				Intersection	Orange Street/Center Street			
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside			
Date Performed	1/18/2016				Analysis Year	Existing Plus Project			
Analysis Time Period	Evening Peak Hour								
Project ID Center Street Warehouse									
East/West Street: Center Street					North/South Street: Orange Street				
Volume Adjustments and Site Characteristics									
Approach	Eastbound				Westbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	3	373	19		68	185	7		
%Thrus Left Lane									
Approach	Northbound				Southbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	17	1	133		18	7	2		
%Thrus Left Lane									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LTR		LTR		LTR		LTR		
PHF	0.84		0.84		0.84		0.84		
Flow Rate (veh/h)	469		308		179		31		
% Heavy Vehicles	0		0		0		0		
No. Lanes	1		1		1		1		
Geometry Group	1		1		1		1		
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.0		0.3		0.1		0.7		
Prop. Right-Turns	0.0		0.0		0.9		0.1		
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0		
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	
hadj, computed	-0.0		0.0		-0.5		0.1		
Departure Headway and Service Time									
hd, initial value (s)	3.20		3.20		3.20		3.20		
x, initial	0.42		0.27		0.16		0.03		
hd, final value (s)	4.92		5.18		5.39		6.34		
x, final value	0.64		0.44		0.27		0.05		
Move-up time, m (s)	2.0		2.0		2.0		2.0		
Service Time, t _s (s)	2.9		3.2		3.4		4.3		
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity (veh/h)	714		558		429		281		
Delay (s/veh)	16.30		12.25		10.34		9.71		
LOS	C		B		B		A		
Approach: Delay (s/veh)	16.30		12.25		10.34		9.71		
LOS	C		B		B		A		
Intersection Delay (s/veh)	13.75								
Intersection LOS	B								

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Morning Peak Hour	PHF	0.91	
Intersection	Stephens Avenue/Center S	Analysis Year	Existing Plus Project	Analysis Period	1> 7:00	
File Name	AMEP5.xus					
Project Description	Center Street Warehouse					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	1	138	87	303	247	7	133	2	100	9	10	1

Signal Information											
Cycle, s	54.0	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	24.4	3.9	13.7	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

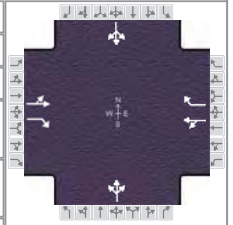
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		7.0		12.0		12.0
Phase Duration, s		28.4		28.4		17.7		7.9
Change Period, (Y+R _c), s		4.0		4.0		4.0		4.0
Max Allow Headway (MAH), s		3.2		3.2		3.2		3.1
Queue Clearance Time (g _s), s		4.6		22.5		9.1		2.6
Green Extension Time (g _e), s		1.9		1.9		0.5		0.0
Phase Call Probability		1.00		1.00		0.98		0.28
Max Out Probability		0.00		0.01		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		153	96		604	8		258			22	
Adjusted Saturation Flow Rate (s), veh/h/ln		1899	1610		1481	1610		1720			1842	
Queue Service Time (g _s), s		0.0	1.9		18.0	0.1		7.1			0.6	
Cycle Queue Clearance Time (g _c), s		2.6	1.9		20.5	0.1		7.1			0.6	
Green Ratio (g/C)		0.45	0.45		0.45	0.45		0.25			0.07	
Capacity (c), veh/h		924	726		771	726		436			135	
Volume-to-Capacity Ratio (X)		0.165	0.132		0.784	0.011		0.592			0.163	
Available Capacity (c _a), veh/h		1470	1191		1199	1191		954			1022	
Back of Queue (Q), veh/ln (50th percentile)		0.9	0.5		5.4	0.0		2.5			0.2	
Queue Storage Ratio (RQ) (50th percentile)		0.00	0.00		0.00	0.00		0.00			0.00	
Uniform Delay (d ₁), s/veh		8.9	8.7		13.8	8.2		17.7			23.5	
Incremental Delay (d ₂), s/veh		0.0	0.0		0.7	0.0		0.5			0.2	
Initial Queue Delay (d ₃), s/veh		0.0	0.0		0.0	0.0		0.0			0.0	
Control Delay (d), s/veh		8.9	8.7		14.5	8.2		18.2			23.7	
Level of Service (LOS)		A	A		B	A		B			C	
Approach Delay, s/veh / LOS	8.8	A		14.4	B		18.2	B		23.7	C	
Intersection Delay, s/veh / LOS	14.2						B					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.1	B		2.1	B		2.3	B		2.3	B	
Bicycle LOS Score / LOS	0.9	A		1.5	A		0.9	A		0.5	A	

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Evening Peak Hour	PHF	0.93	
Intersection	Stephens Avenue/Center S	Analysis Year	Existing Plus Project	Analysis Period	1> 7:00	
File Name	PMEP5.xus					
Project Description	Center Street Warehouse					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	6	315	197	187	162	9	115	5	58	3	3	2

Signal Information											
Cycle, s	50.9	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	19.0	2.2	17.7	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

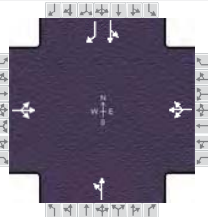
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		7.0		12.0		12.0
Phase Duration, s		23.0		23.0		21.7		6.2
Change Period, (Y+R _c), s		4.0		4.0		4.0		4.0
Max Allow Headway (MAH), s		3.3		3.3		3.2		3.1
Queue Clearance Time (g _s), s		9.1		14.0		6.1		2.2
Green Extension Time (g _e), s		2.2		2.2		0.3		0.0
Phase Call Probability		1.00		1.00		0.93		0.11
Max Out Probability		0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		345	212		375	10		191			9	
Adjusted Saturation Flow Rate (s), veh/h/ln		1895	1610		1360	1610		1742			1786	
Queue Service Time (g_s), s		0.0	4.8		4.9	0.2		4.1			0.2	
Cycle Queue Clearance Time (g_c), s		7.1	4.8		12.0	0.2		4.1			0.2	
Green Ratio (g/C)		0.37	0.37		0.37	0.37		0.35			0.04	
Capacity (c), veh/h		779	601		616	601		607			77	
Volume-to-Capacity Ratio (X)		0.443	0.353		0.609	0.016		0.315			0.112	
Available Capacity (c_a), veh/h		1555	1265		1165	1265		1026			1052	
Back of Queue (Q), veh/ln (50th percentile)		2.5	1.4		3.0	0.1		1.3			0.1	
Queue Storage Ratio (RQ) (50th percentile)		0.00	0.00		0.00	0.00		0.00			0.00	
Uniform Delay (d_1), s/veh		12.2	11.5		13.6	10.1		12.1			23.4	
Incremental Delay (d_2), s/veh		0.1	0.1		0.4	0.0		0.1			0.2	
Initial Queue Delay (d_3), s/veh		0.0	0.0		0.0	0.0		0.0			0.0	
Control Delay (d), s/veh		12.4	11.7		14.0	10.1		12.3			23.7	
Level of Service (LOS)		B	B		B	B		B			C	
Approach Delay, s/veh / LOS	12.1	B		13.9	B		12.3	B		23.7	C	
Intersection Delay, s/veh / LOS	12.8						B					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.1	B		2.1	B		2.3	B		2.3	B	
Bicycle LOS Score / LOS	1.4	A		1.4	A		0.8	A		0.5	A	

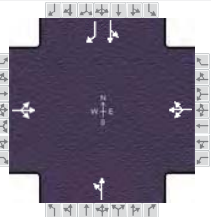
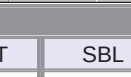
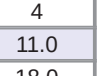
ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	La Cadena/Stephens-I-215 SB		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	Existing Plus Project		
Analysis Time Period	Morning Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Stephens Avenue/I-215 FWY SB					North/South Street: La Cadena Drive			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	41	273	58		173	95	163	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	31	61	11		42	170	41	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LT	R	LT	R
PHF	0.95		0.95		0.95	0.95	0.95	0.95
Flow Rate (veh/h)	391		453		96	11	222	43
% Heavy Vehicles	0		0		0	0	0	0
No. Lanes	1		1		2		2	
Geometry Group	2		2		5		5	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.1		0.4		0.3	0.0	0.2	0.0
Prop. Right-Turns	0.2		0.4		0.0	1.0	0.0	1.0
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		-0.1		0.2	-0.7	0.1	-0.7
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20	3.20	3.20	3.20
x, initial	0.35		0.40		0.09	0.01	0.20	0.04
hd, final value (s)	5.99		5.82		7.90	7.00	7.38	6.55
x, final value	0.65		0.73		0.21	0.02	0.45	0.08
Move-up time, m (s)	2.0		2.0		2.3		2.3	
Service Time, t _s (s)	4.0		3.8		5.6	4.7	5.1	4.3
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	576		600		346	261	449	293
Delay (s/veh)	19.46		23.02		12.70	9.85	16.08	9.81
LOS	C		C		B	A	C	A
Approach: Delay (s/veh)	19.46		23.02		12.40		15.06	
LOS	C		C		B		C	
Intersection Delay (s/veh)	19.21							
Intersection LOS	C							

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information													
Agency	Kunzman Associates, Inc.					Duration, h		0.25											
Analyst	BC		Analysis Date		1/18/2016		Area Type		Other										
Jurisdiction	Riverside		Time Period		Morning Peak Hour		PHF		0.95										
Intersection	La Cadena/Stephens-I-215		Analysis Year		Existing Plus Project		Analysis Period		1> 7:00										
File Name	AMEP6I.xus																		
Project Description	Center Street Warehouse - With Improvements																		
Demand Information				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h				41	273	58	173	95	163	31	61		42	170	41				
Signal Information																			
Cycle, s	51.6	Reference Phase	2																
Offset, s	0	Reference Point	End																
Uncoordinated	Yes	Simult. Gap E/W	On	Green	18.8	11.7	9.0	0.0	0.0	0.0	0.0								
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	0.0								
				Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
Timer Results				EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase						2				6				8				4	
Case Number						8.0				8.0				12.0				11.0	
Phase Duration, s						22.8				22.8				13.0				15.7	
Change Period, (Y+R _c), s						4.0				4.0				4.0				4.0	
Max Allow Headway (MAH), s						3.4				3.4				3.1				3.1	
Queue Clearance Time (g _s), s						10.9				17.0				4.3				7.4	
Green Extension Time (g _e), s						2.0				1.9				0.1				0.5	
Phase Call Probability						1.00				1.00				0.75				0.98	
Max Out Probability						0.00				0.04				0.00				0.00	
Movement Group Results				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement				5	2	12	1	6	16	3	8		7	4	14				
Adjusted Flow Rate (v), veh/h					392			454			97			223	43				
Adjusted Saturation Flow Rate (s), veh/h/ln					1791			1430			1869			1881	1610				
Queue Service Time (g _s), s					0.0			6.2			2.3			5.4	1.1				
Cycle Queue Clearance Time (g _c), s					8.9			15.0			2.3			5.4	1.1				
Green Ratio (g/C)					0.37			0.37			0.17			0.23	0.23				
Capacity (c), veh/h					731			620			327			428	366				
Volume-to-Capacity Ratio (X)					0.535			0.732			0.296			0.521	0.118				
Available Capacity (c _a), veh/h					1103			914			1086			1093	936				
Back of Queue (Q), veh/ln (50th percentile)					3.0			4.0			0.9			2.1	0.4				
Queue Storage Ratio (RQ) (50th percentile)					0.00			0.00			0.00			0.00	0.00				
Uniform Delay (d ₁), s/veh					13.2			14.9			18.5			17.5	15.8				
Incremental Delay (d ₂), s/veh					0.2			0.6			0.2			0.4	0.1				
Initial Queue Delay (d ₃), s/veh					0.0			0.0			0.0			0.0	0.0				
Control Delay (d), s/veh					13.4			15.5			18.7			17.8	15.9				
Level of Service (LOS)					B			B			B			B	B				
Approach Delay, s/veh / LOS				13.4	B	15.5	B	18.7	B	17.5	B								
Intersection Delay, s/veh / LOS				15.5						B									
Multimodal Results				EB			WB			NB			SB						
Pedestrian LOS Score / LOS				2.1	B	2.3	B	2.1	B	2.1	B	2.1	B						
Bicyclist LOS Score / LOS				1.1	A	1.2	A	0.6	A	0.9	A	0.9	A						

ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	La Cadena/Stephens-I-215 SB		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	Existing Plus Project		
Analysis Time Period	Evening Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Stephens Avenue/I-215 FWY SB					North/South Street: La Cadena Drive			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	62	221	63		84	94	5	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	30	152	15		65	352	50	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LT	R	LT	R
PHF	0.96		0.96		0.96	0.96	0.96	0.96
Flow Rate (veh/h)	359		189		189	15	433	52
% Heavy Vehicles	0		0		0	0	0	0
No. Lanes	1		1		2		2	
Geometry Group	2		2		5		5	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.2		0.5		0.2	0.0	0.2	0.0
Prop. Right-Turns	0.2		0.0		0.0	1.0	0.0	1.0
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		0.1		0.1	-0.7	0.1	-0.7
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20	3.20	3.20	3.20
x, initial	0.32		0.17		0.17	0.01	0.38	0.05
hd, final value (s)	6.60		7.23		7.64	6.83	7.02	6.22
x, final value	0.66		0.38		0.40	0.03	0.84	0.09
Move-up time, m (s)	2.0		2.0		2.3		2.3	
Service Time, t _s (s)	4.6		5.2		5.3	4.5	4.7	3.9
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	516		439		425	265	504	302
Delay (s/veh)	21.39		14.58		15.37	9.73	37.11	9.54
LOS	C		B		C	A	E	A
Approach: Delay (s/veh)	21.39		14.58		14.95		34.15	
LOS	C		B		B		D	
Intersection Delay (s/veh)	24.29							
Intersection LOS	C							

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information											
Agency	Kunzman Associates, Inc.					Duration, h	0.25										
Analyst	BC	Analysis Date	1/18/2016			Area Type	Other										
Jurisdiction	Riverside	Time Period	Morning Peak Hour			PHF	0.96										
Intersection	La Cadena/Stephens-I-215	Analysis Year	Existing Plus Project			Analysis Period	1> 7:00										
File Name	PMEP6I.xus																
Project Description	Center Street Warehouse - With Improvements																
Demand Information		EB			WB			NB			SB						
Approach Movement		L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h		62	221	63	84	94	5	30	152		65	352	50				
Signal Information																	
Cycle, s	51.0	Reference Phase	2		Green	12.9	14.0	12.1	0.0	0.0	0.0						
Offset, s	0	Reference Point	End		Yellow	4.0	4.0	4.0	0.0	0.0	0.0						
Uncoordinated	Yes	Simult. Gap E/W	On		Red	0.0	0.0	0.0	0.0	0.0	0.0						
Force Mode	Fixed	Simult. Gap N/S	On														
Timer Results		EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase				2				6				8				4	
Case Number				8.0				8.0				12.0				11.0	
Phase Duration, s				16.9				16.9				16.1				18.0	
Change Period, (Y+R _c), s				4.0				4.0				4.0				4.0	
Max Allow Headway (MAH), s				3.2				3.2				3.0				3.1	
Queue Clearance Time (g _s), s				11.8				7.2				6.4				13.1	
Green Extension Time (g _e), s				1.1				1.1				0.3				0.9	
Phase Call Probability				1.00				1.00				0.93				1.00	
Max Out Probability				0.00				0.00				0.00				0.00	
Movement Group Results		EB			WB			NB			SB						
Approach Movement		L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement		5	2	12	1	6	16	3	8		7	4	14				
Adjusted Flow Rate (v), veh/h			360			191			190			434	52				
Adjusted Saturation Flow Rate (s), veh/h/ln			1751			1467			1884			1885	1610				
Queue Service Time (g _s), s			4.6			0.0			4.4			11.1	1.2				
Cycle Queue Clearance Time (g _c), s			9.8			5.2			4.4			11.1	1.2				
Green Ratio (g/C)			0.25			0.25			0.24			0.27	0.27				
Capacity (c), veh/h			526			474			448			517	442				
Volume-to-Capacity Ratio (X)			0.685			0.402			0.423			0.840	0.118				
Available Capacity (c _a), veh/h			1097			949			1107			1107	946				
Back of Queue (Q), veh/ln (50th percentile)			3.5			1.6			1.7			4.3	0.4				
Queue Storage Ratio (RQ) (50th percentile)			0.00			0.00			0.00			0.00	0.00				
Uniform Delay (d ₁), s/veh			17.8			16.0			16.5			17.5	13.9				
Incremental Delay (d ₂), s/veh			0.6			0.2			0.2			1.4	0.0				
Initial Queue Delay (d ₃), s/veh			0.0			0.0			0.0			0.0	0.0				
Control Delay (d), s/veh			18.4			16.2			16.7			18.9	13.9				
Level of Service (LOS)			B			B			B			B	B				
Approach Delay, s/veh / LOS		18.4	B		16.2	B		16.7	B		18.4	B					
Intersection Delay, s/veh / LOS		17.8						B									
Multimodal Results		EB			WB			NB			SB						
Pedestrian LOS Score / LOS		2.1	B		2.3	B		2.1	B		2.1	B					
Bicyclist LOS Score / LOS		1.1	A		0.8	A		0.8	A		1.1	A					

ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	La Cadena/Highgrove-I-215 NB		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	Existing Plus Project		
Analysis Time Period	Morning Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Highgrove Place/I-215 FWY NB					North/South Street: La Cadena Drive			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	45	234	0		29	0	4	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	0	32	38		1	77	0	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LT		L	R	TR		LT	
PHF	0.89		0.89	0.89	0.89		0.89	
Flow Rate (veh/h)	312		32	4	77		87	
% Heavy Vehicles	0		0	0	0		0	
No. Lanes	1		2		1		1	
Geometry Group	4a		5		2		2	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.2		1.0	0.0	0.0		0.0	
Prop. Right-Turns	0.0		0.0	1.0	0.5		0.0	
Prop. Heavy Vehicle	0.0		0.0	0.0	0.0		0.0	
hLT-adj	0.2	0.2	0.5	0.5	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.0		0.5	-0.7	-0.3		0.0	
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20	3.20	3.20		3.20	
x, initial	0.28		0.03	0.00	0.07		0.08	
hd, final value (s)	4.49		5.68	4.47	4.52		4.83	
x, final value	0.39		0.05	0.00	0.10		0.12	
Move-up time, m (s)	2.0		2.3		2.0		2.0	
Service Time, t _s (s)	2.5		3.4	2.2	2.5		2.8	
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	562		282	254	327		337	
Delay (s/veh)	10.33		8.68	7.19	8.00		8.46	
LOS	B		A	A	A		A	
Approach: Delay (s/veh)	10.33		8.52		8.00		8.46	
LOS	B		A		A		A	
Intersection Delay (s/veh)	9.53							
Intersection LOS	A							

ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	La Cadena/Highgrove-I-215 NB		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	Existing Plus Project		
Analysis Time Period	Evening Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Highgrove Place/I-215 FWY NB					North/South Street: La Cadena Drive			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	26	244	0		19	0	3	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	0	94	65		1	153	0	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LT		L	R	TR		LT	
PHF	0.91		0.91	0.91	0.91		0.91	
Flow Rate (veh/h)	296		20	3	174		169	
% Heavy Vehicles	0		0	0	0		0	
No. Lanes	1		2		1		1	
Geometry Group	4a		5		2		2	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.1		1.0	0.0	0.0		0.0	
Prop. Right-Turns	0.0		0.0	1.0	0.4		0.0	
Prop. Heavy Vehicle	0.0		0.0	0.0	0.0		0.0	
hLT-adj	0.2	0.2	0.5	0.5	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.0		0.5	-0.7	-0.2		0.0	
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20	3.20	3.20		3.20	
x, initial	0.26		0.02	0.00	0.15		0.15	
hd, final value (s)	4.93		6.23	5.01	4.72		4.96	
x, final value	0.41		0.03	0.00	0.23		0.23	
Move-up time, m (s)	2.0		2.3		2.0		2.0	
Service Time, t _s (s)	2.9		3.9	2.7	2.7		3.0	
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	546		270	253	424		419	
Delay (s/veh)	11.25		9.15	7.74	9.11		9.47	
LOS	B		A	A	A		A	
Approach: Delay (s/veh)	11.25		8.97		9.11		9.47	
LOS	B		A		A		A	
Intersection Delay (s/veh)	10.15							
Intersection LOS	B							

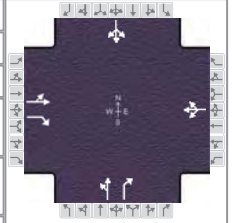
TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Highgrove Place/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	Existing Plus Project		
Analysis Time Period	Morning Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Highgrove Place			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	1	229	0	11	408	5	
Peak-Hour Factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	
Hourly Flow Rate, HFR (veh/h)	1	251	0	12	448	5	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	LT		R	LTR			
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	122	1	151	2	1	22	
Peak-Hour Factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	
Hourly Flow Rate, HFR (veh/h)	134	1	165	2	1	24	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	LT		R		LTR		
Delay, Queue Length, and Level of Service							
Approach	Eastbound	Westbound	Northbound			Southbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration	LT	LTR	LT		R		LTR
v (veh/h)	1	12	135		165		27
C (m) (veh/h)	1118	1326	318		793		534
v/c	0.00	0.01	0.42		0.21		0.05
95% queue length	0.00	0.03	2.03		0.78		0.16
Control Delay (s/veh)	8.2	7.7	24.4		10.7		12.1
LOS	A	A	C		B		B
Approach Delay (s/veh)	--	--	16.9			12.1	
Approach LOS	--	--	C			B	

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Kunzman Associates, Inc.			Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other
Jurisdiction	Riverside	Time Period	Morning Peak Hour	PHF	0.91
Intersection	Highgrove Place/Center St	Analysis Year	Existing Plus Project	Analysis Period	1> 7:00
File Name	AMEP81.xus				
Project Description	Center Street Warehouse - With Improvements				



A map of the intersection area. The map shows a grid of streets. The intersection of Center Street and Highgrove Place is highlighted. The map includes a north arrow and a scale bar. The streets shown are Center Street, Highgrove Place, and several surrounding streets.



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	1	229	0	11	408	5	122	1	151	2	1	22

Signal Information											
Cycle, s	51.0	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	20.0	3.2	15.8	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

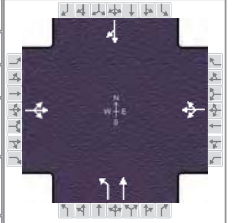
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		8.0		11.0		12.0
Phase Duration, s		24.0		24.0		19.8		7.2
Change Period, (Y+R _c), s		4.0		4.0		4.0		4.0
Max Allow Headway (MAH), s		3.0		3.0		3.3		3.3
Queue Clearance Time (g _s), s		6.8		12.1		6.0		2.8
Green Extension Time (g _e), s		1.3		1.3		0.5		0.0
Phase Call Probability		1.00		1.00		0.99		0.32
Max Out Probability		0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		253	0		466			135	166		27	
Adjusted Saturation Flow Rate (s), veh/h/ln		1899	1610		1885			1810	1610		1635	
Queue Service Time (g _s), s		0.0	0.0		0.0			2.8	4.0		0.8	
Cycle Queue Clearance Time (g _c), s		4.8	0.0		10.1			2.8	4.0		0.8	
Green Ratio (g/C)		0.39	0.39		0.39			0.31	0.31		0.06	
Capacity (c), veh/h		816	631		812			560	498		103	
Volume-to-Capacity Ratio (X)		0.310	0.000		0.574			0.241	0.333		0.266	
Available Capacity (c _a), veh/h		1186	947		1177			781	695		481	
Back of Queue (Q), veh/ln (50th percentile)		1.6	0.0		3.5			1.0	1.3		0.3	
Queue Storage Ratio (RQ) (50th percentile)		0.00	0.00		0.00			0.00	0.00		0.00	
Uniform Delay (d ₁), s/veh		10.9	0.0		12.5			13.1	13.6		22.8	
Incremental Delay (d ₂), s/veh		0.1	0.0		0.2			0.1	0.1		0.5	
Initial Queue Delay (d ₃), s/veh		0.0	0.0		0.0			0.0	0.0		0.0	
Control Delay (d), s/veh		10.9	0.0		12.7			13.2	13.7		23.3	
Level of Service (LOS)		B			B			B	B		C	
Approach Delay, s/veh / LOS	10.9	B		12.7	B		13.5	B		23.3	C	
Intersection Delay, s/veh / LOS	12.8						B					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.2	B		2.1	B		2.1	B		2.3	B	
Bicycle LOS Score / LOS	0.9	A		1.3	A		1.0	A		0.5	A	

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Evening Peak Hour	PHF	0.88	
Intersection	Iowa Avenue-I-215 NB Rar	Analysis Year	Existing Plus Project	Analysis Period	1> 7:00	
File Name	PMEP9.xus					
Project Description	Center Street Warehouse					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	121	0	764	0	0	0	327	604			21	317

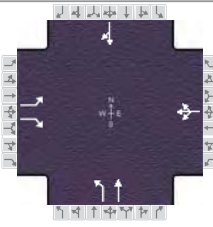
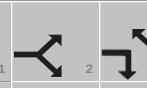
Signal Information											
Cycle, s	68.0	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	30.0	16.0	10.0	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		8.0		8.0	2.0	4.0		8.3
Phase Duration, s		34.0		34.0	20.0	34.0		14.0
Change Period, (Y+R _c), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (MAH), s		3.3		0.0	3.1	3.1		3.1
Queue Clearance Time (g _s), s		32.0			15.4	23.5		12.0
Green Extension Time (g _e), s		0.0		0.0	0.6	2.3		0.0
Phase Call Probability		1.00			1.00	1.00		1.00
Max Out Probability		1.00			0.01	0.02		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8			4	14
Adjusted Flow Rate (v), veh/h		1006			0		372	686			384	
Adjusted Saturation Flow Rate (s), veh/h/ln		1593			0		1810	1900			1626	
Queue Service Time (g _s), s		25.7			0.0		13.4	21.5			10.0	
Cycle Queue Clearance Time (g _c), s		30.0			0.0		13.4	21.5			10.0	
Green Ratio (g/C)		0.44					0.24	0.44			0.15	
Capacity (c), veh/h		763					425	838			239	
Volume-to-Capacity Ratio (X)		1.318			0.000		0.874	0.819			1.606	
Available Capacity (c _a), veh/h		763					666	1118			239	
Back of Queue (Q), veh/ln (50th percentile)		43.1			0.0		5.9	8.6			23.0	
Queue Storage Ratio (RQ) (50th percentile)		0.00			0.00		0.00	0.00			0.00	
Uniform Delay (d ₁), s/veh		20.1					25.0	16.6			29.0	
Incremental Delay (d ₂), s/veh		152.1			0.0		5.0	2.7			291.4	
Initial Queue Delay (d ₃), s/veh		0.0			0.0		0.0	0.0			0.0	
Control Delay (d), s/veh		172.2					30.1	19.4			320.4	
Level of Service (LOS)		F					C	B			F	
Approach Delay, s/veh / LOS	172.2	F		0.0			23.1	C		320.4	F	
Intersection Delay, s/veh / LOS	131.0						F					

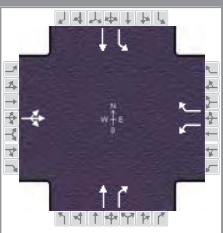
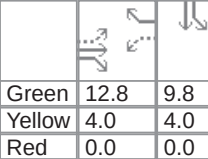
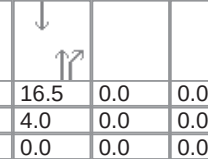
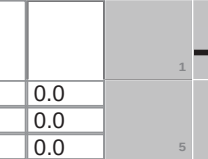
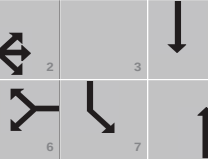
Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.3	B		2.1	B		2.1	B		2.1	B	
Bicycle LOS Score / LOS	2.1	B		0.5	A		2.2	B		1.1	A	

HCS 2010 Signalized Intersection Results Summary

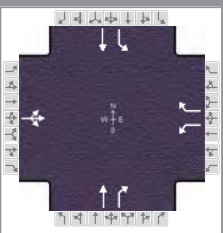
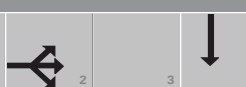
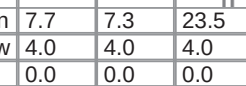
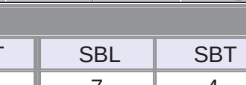
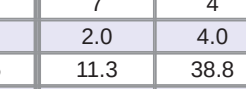
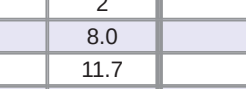
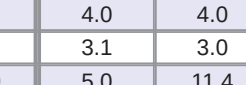
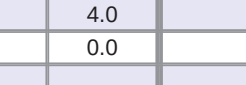
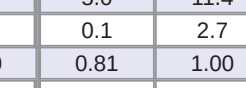
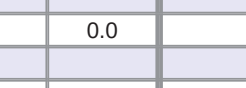
General Information						Intersection Information									
Agency		Kunzman Associates, Inc.				Duration, h		0.25							
Analyst		BC		Analysis Date		1/18/2016		Area Type		Other					
Jurisdiction		Riverside		Time Period		Evening Peak Hour		PHF		0.88					
Intersection		Iowa Avenue-I-215 NB Rar		Analysis Year		Existing Plus Project		Analysis Period		1> 7:00					
File Name		PMEP9I.xus													
Project Description		Center Street Warehouse - With Improvements													
Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				121		764	0	0	0	327	604			21	317
Signal Information															
Cycle, s	79.4	Reference Phase	2												
Offset, s	0	Reference Point	End												
Uncoordinated	Yes	Simult. Gap E/W	On												
Force Mode	Fixed	Simult. Gap N/S	On	Green	15.0	21.0	31.4	0.0	0.0	0.0					
				Yellow	4.0	4.0	4.0	0.0	0.0	0.0					
				Red	0.0	0.0	0.0	0.0	0.0	0.0					
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase					2		6		8		4				
Case Number					5.0		8.0		10.0		12.0				
Phase Duration, s					19.0		19.0		35.4		25.0				
Change Period, (Y+Rc), s					4.0		4.0		4.0		4.0				
Max Allow Headway (MAH), s					3.3		0.0		3.1		3.3				
Queue Clearance Time (gs), s					17.0				29.1		20.1				
Green Extension Time (ge), s					0.0		0.0		2.2		0.8				
Phase Call Probability					1.00				1.00		1.00				
Max Out Probability					1.00				0.00		0.00				
Movement Group Results				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				5		12	1	6	16	3	8			4	14
Adjusted Flow Rate (v), veh/h				138		868		0		372	686			384	
Adjusted Saturation Flow Rate (s), veh/h/ln				1810		1610		0		1810	1900			1626	
Queue Service Time (gs), s				5.3		15.0		0.0		12.4	27.1			18.1	
Cycle Queue Clearance Time (gc), s				5.3		15.0		0.0		12.4	27.1			18.1	
Green Ratio (g/C)				0.19		0.59				0.40	0.40			0.26	
Capacity (c), veh/h				432		941				716	752			430	
Volume-to-Capacity Ratio (X)				0.318		0.922		0.000		0.519	0.912			0.894	
Available Capacity (ca), veh/h				432		941				1594	1674			818	
Back of Queue (Q), veh/ln (50th percentile)				2.2		15.0		0.0		4.8	11.4			6.9	
Queue Storage Ratio (RQ) (50th percentile)				0.00		0.00		0.00		0.00	0.00			0.00	
Uniform Delay (d1), s/veh				28.3		14.9				18.2	22.7			28.2	
Incremental Delay (d2), s/veh				0.2		13.9		0.0		0.2	1.9			2.7	
Initial Queue Delay (d3), s/veh				0.0		0.0		0.0		0.0	0.0			0.0	
Control Delay (d), s/veh				28.4		28.8				18.5	24.6			30.8	
Level of Service (LOS)				C		C				B	C			C	
Approach Delay, s/veh / LOS				28.7		C		0.0		22.4		C		30.8	
Intersection Delay, s/veh / LOS				26.3						C					
Multimodal Results				EB			WB			NB			SB		
Pedestrian LOS Score / LOS				2.3		B	2.1		B	1.4		A	2.3		B
Bicycle LOS Score / LOS				2.3		B	2.1		B	1.4		A	2.3		B

City of Riverside Planning Commission - Exhibit 1 - Development Review Committee Staff Report

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information													
Agency		Kunzman Associates, Inc.				Duration, h		0.25											
Analyst		BC		Analysis Date		1/18/2016		Area Type		Other									
Jurisdiction		Riverside		Time Period		Morning Peak Hour		PHF		0.82									
Intersection		Iowa Avenue/Main Street		Analysis Year		Existing Plus Project		Analysis Period		1> 7:00									
File Name		AMEP10.xus																	
Project Description		Center Street Warehouse																	
Demand Information				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h				0	0	0	103		268		448	0	216	592					
Signal Information																			
Cycle, s	51.1	Reference Phase	2																
Offset, s	0	Reference Point	End																
Uncoordinated	Yes	Simult. Gap E/W	On																
Force Mode	Fixed	Simult. Gap N/S	On																
Timer Results				EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase						2				6				8		7		4	
Case Number						8.0				5.0				7.3		2.0		4.0	
Phase Duration, s						16.8				16.8				20.5		13.8		34.3	
Change Period, (Y+R _c), s						4.0				4.0				4.0		4.0		4.0	
Max Allow Headway (MAH), s						0.0				3.3				3.0		3.1		3.0	
Queue Clearance Time (g _s), s										11.8				15.9		9.0		14.7	
Green Extension Time (g _e), s						0.0				1.0				0.6		0.3		1.6	
Phase Call Probability										1.00				1.00		0.98		1.00	
Max Out Probability										0.00				0.76		0.08		0.56	
Movement Group Results				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement				5	2	12	1		16		8	18	7	4					
Adjusted Flow Rate (v), veh/h					0		126		327		546	0	263	722					
Adjusted Saturation Flow Rate (s), veh/h/ln					0		1810		1610		1900	1610	1810	1900					
Queue Service Time (g _s), s					0.0		2.9		9.8		13.9	0.0	7.0	12.7					
Cycle Queue Clearance Time (g _c), s					0.0		2.9		9.8		13.9	0.0	7.0	12.7					
Green Ratio (g/C)							0.25		0.25		0.32	0.32	0.19	0.59					
Capacity (c), veh/h							593		402		616	522	346	1128					
Volume-to-Capacity Ratio (X)					0.000		0.212		0.812		0.887	0.000	0.762	0.640					
Available Capacity (c _a), veh/h							1557		1260		743	630	531	1128					
Back of Queue (Q), veh/ln (50th percentile)					0.0		1.0		3.3		6.7	0.0	2.7	3.4					
Queue Storage Ratio (RQ) (50th percentile)					0.00		0.00		0.00		0.00	0.00	0.00	0.00					
Uniform Delay (d ₁), s/veh							15.5		18.0		16.4	0.0	19.6	6.8					
Incremental Delay (d ₂), s/veh					0.0		0.1		1.5		9.8	0.0	1.3	1.0					
Initial Queue Delay (d ₃), s/veh					0.0		0.0		0.0		0.0	0.0	0.0	0.0					
Control Delay (d), s/veh							15.5		19.6		26.2	0.0	20.9	7.8					
Level of Service (LOS)							B		B		C		C	A					
Approach Delay, s/veh / LOS				0.0			18.4		B	26.2		C	11.3		B				
Intersection Delay, s/veh / LOS				17.0						B									
Multimodal Results				EB			WB			NB			SB						
Pedestrian LOS Score / LOS				2.3		B	2.3		B	2.3		B	1.3		A				
Bicycle LOS Score / LOS				0.5		A	0.5		A	1.4		A	2.1		B				

HCS 2010 Signalized Intersection Results Summary

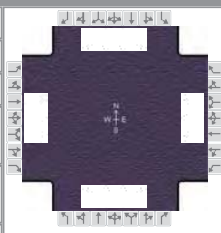
General Information						Intersection Information											
Agency		Kunzman Associates, Inc.				Duration, h		0.25									
Analyst		BC		Analysis Date		1/18/2016		Area Type		Other							
Jurisdiction		Riverside		Time Period		Evening Peak Hour		PHF		0.95							
Intersection		Iowa Avenue/Main Street		Analysis Year		Existing Plus Project		Analysis Period		1> 7:00							
File Name		PMEP10.xus															
Project Description		Center Street Warehouse															
Demand Information						EB			WB			NB			SB		
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h						0	0	0	112		164		787	0	113	676	
Signal Information																	
Cycle, s	50.6	Reference Phase	2														
Offset, s	0	Reference Point	End														
Uncoordinated	Yes	Simult. Gap E/W	On														
Force Mode	Fixed	Simult. Gap N/S	On	Green	7.7	7.3	23.5	0.0	0.0	0.0							
				Yellow	4.0	4.0	4.0	0.0	0.0	0.0							
				Red	0.0	0.0	0.0	0.0	0.0	0.0							
Timer Results						EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase							2		6		8	7	4				
Case Number							8.0		5.0		7.3	2.0	4.0				
Phase Duration, s							11.7		11.7		27.5	11.3	38.8				
Change Period, (Y+R _c), s							4.0		4.0		4.0	4.0	4.0				
Max Allow Headway (MAH), s							0.0		3.2		3.0	3.1	3.0				
Queue Clearance Time (g _s), s									7.1		22.9	5.0	11.4				
Green Extension Time (g _e), s							0.0		0.6		0.6	0.1	2.7				
Phase Call Probability									1.00		1.00	0.81	1.00				
Max Out Probability									0.00		1.00	0.00	0.33				
Movement Group Results						EB			WB			NB			SB		
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement						5	2	12	1		16		8	18	7	4	
Adjusted Flow Rate (v), veh/h							0		118		173		828	0	119	712	
Adjusted Saturation Flow Rate (s), veh/h/ln							0		1810		1610		1900	1610	1810	1900	
Queue Service Time (g _s), s							0.0		3.0		5.1		20.9	0.0	3.0	9.4	
Cycle Queue Clearance Time (g _c), s							0.0		3.0		5.1		20.9	0.0	3.0	9.4	
Green Ratio (g/C)									0.15		0.15		0.46	0.46	0.14	0.69	
Capacity (c), veh/h									419		246		884	749	262	1309	
Volume-to-Capacity Ratio (X)							0.000		0.281		0.701		0.937	0.000	0.454	0.544	
Available Capacity (c _a), veh/h									1573		1273		939	796	536	1309	
Back of Queue (Q), veh/ln (50th percentile)							0.0		1.1		1.8		10.3	0.0	1.2	1.5	
Queue Storage Ratio (RQ) (50th percentile)							0.00		0.00		0.00		0.00	0.00	0.00	0.00	
Uniform Delay (d ₁), s/veh									19.4		20.3		12.8	0.0	19.8	3.9	
Incremental Delay (d ₂), s/veh							0.0		0.1		1.4		15.4	0.0	0.5	0.3	
Initial Queue Delay (d ₃), s/veh							0.0		0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (d), s/veh									19.5		21.7		28.3	0.0	20.3	4.2	
Level of Service (LOS)									B		C		C		C	A	
Approach Delay, s/veh / LOS						0.0			20.8		C	28.3		C	6.5		A
Intersection Delay, s/veh / LOS						17.9						B					
Multimodal Results						EB			WB			NB			SB		
Pedestrian LOS Score / LOS						2.3		B	2.3		B	2.2		B	1.3		A
Bicycle LOS Score / LOS						0.5		A	0.5		A	1.9		A	1.9		A

Planning Commission - Exhibit 1- Development Review Committee Staff Report

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HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information							
Agency		Kunzman Associates, Inc.				Duration, h		0.25					
Analyst		BC		Analysis Date		1/18/2016		Area Type		Other			
Jurisdiction		Riverside		Time Period		Morning Peak Hour		PHF		0.90			
Intersection		Iowa Avenue/Center Street		Analysis Year		Existing Plus Project		Analysis Period		1> 7:00			
File Name		AMEP11.xus											
Project Description		Center Street Warehouse											



Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				101	186	76	126	268	55	73	333	79	28	555	82

Signal Information																			
Cycle, s	51.5	Reference Phase	2																
Offset, s	0	Reference Point	End	Green	7.2	0.6	9.8	3.2	2.9	11.7									
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	0.0	4.0									
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0									

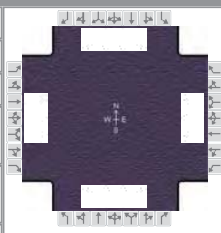
Timer Results				EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase				5		2		1		6		3		8		7		4	
Case Number				2.0		4.0		2.0		3.0		2.0		3.0		2.0		3.0	
Phase Duration, s				11.2		13.8		11.8		14.4		10.2		18.7		7.2		15.7	
Change Period, (Y+R _c), s				4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0	
Max Allow Headway (MAH), s				3.1		3.1		3.1		3.1		3.1		3.1		3.1		3.1	
Queue Clearance Time (g _s), s				4.9		5.8		5.7		9.6		4.1		6.2		2.8		10.2	
Green Extension Time (g _e), s				0.1		1.0		0.1		0.7		0.1		2.2		0.0		1.6	
Phase Call Probability				0.80		1.00		0.87		1.00		0.69		1.00		0.36		1.00	
Max Out Probability				0.00		0.04		0.00		0.32		0.00		0.15		0.00		0.56	

Movement Group Results				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement				5	2	12	1	6	16	3	8	18	7	4	14				
Adjusted Flow Rate (v), veh/h				112	149	142	140	298	61	81	370	88	31	617	91				
Adjusted Saturation Flow Rate (s), veh/h/ln				1810	1900	1716	1810	1900	1610	1810	1809	1610	1810	1809	1610				
Queue Service Time (g _s), s				2.9	3.6	3.8	3.7	7.6	1.6	2.1	4.2	2.1	0.8	8.2	2.4				
Cycle Queue Clearance Time (g _c), s				2.9	3.6	3.8	3.7	7.6	1.6	2.1	4.2	2.1	0.8	8.2	2.4				
Green Ratio (g/C)				0.14	0.19	0.19	0.15	0.20	0.20	0.12	0.29	0.29	0.06	0.23	0.23				
Capacity (c), veh/h				253	362	327	274	384	325	217	1031	459	114	824	367				
Volume-to-Capacity Ratio (X)				0.444	0.413	0.433	0.512	0.776	0.188	0.373	0.359	0.191	0.273	0.748	0.248				
Available Capacity (c _a), veh/h				526	553	499	526	553	468	526	1052	468	526	1052	468				
Back of Queue (Q), veh/ln (50th percentile)				1.1	1.4	1.3	1.4	3.2	0.5	0.8	1.5	0.7	0.3	3.1	0.8				
Queue Storage Ratio (RQ) (50th percentile)				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Uniform Delay (d ₁), s/veh				20.3	18.3	18.4	20.1	19.5	17.1	20.9	14.7	13.9	23.0	18.5	16.3				
Incremental Delay (d ₂), s/veh				0.5	0.3	0.3	0.6	2.4	0.1	0.4	0.1	0.1	0.5	1.5	0.1				
Initial Queue Delay (d ₃), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Control Delay (d), s/veh				20.8	18.6	18.8	20.7	21.9	17.2	21.3	14.8	14.0	23.5	20.1	16.4				
Level of Service (LOS)				C	B	B	C	C	B	C	B	B	C	C	B				
Approach Delay, s/veh / LOS				19.3		B		21.0		C		15.6		B		19.8		B	
Intersection Delay, s/veh / LOS				18.9						B									

Multimodal Results				EB			WB			NB			SB						
Pedestrian LOS Score / LOS				2.9		C		2.9		C		2.8		C		2.4		B	
Bicyclist LOS Score / LOS				0.8		A		1.3		A		0.9		A		1.1		A	

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information						
Agency	Kunzman Associates, Inc.					Duration, h		0.25				
Analyst	BC		Analysis Date		1/18/2016		Area Type		Other			
Jurisdiction	Riverside		Time Period		Evening Peak Hour		PHF		0.97			
Intersection	Iowa Avenue/Center Street		Analysis Year		Existing Plus Project		Analysis Period		1> 7:00			
File Name	PMEP11.xus											
Project Description	Center Street Warehouse											



Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				226	250	83	120	111	24	81	612	67	42	636	54

Signal Information															
Cycle, s	52.3	Reference Phase	2												
Offset, s	0	Reference Point	End	Green	6.7	1.8	8.0	3.8	1.9	14.1					
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	0.0	4.0					
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0					

Timer Results		EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		5	2	1	6	3	8	7	4
Case Number		2.0	4.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s		12.5	13.8	10.7	12.0	9.6	20.0	7.8	18.1
Change Period, (Y+R _c), s		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (MAH), s		3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Queue Clearance Time (g _s), s		8.5	6.5	5.4	4.8	4.3	9.7	3.2	10.5
Green Extension Time (g _e), s		0.3	0.8	0.2	0.9	0.1	2.9	0.0	3.6
Phase Call Probability		0.97	1.00	0.83	1.00	0.70	1.00	0.47	1.00
Max Out Probability		0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00

Movement Group Results		EB			WB			NB			SB		
Approach Movement		L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		233	176	167	124	114	25	84	631	69	43	656	56
Adjusted Saturation Flow Rate (s), veh/h/ln		1810	1900	1740	1810	1900	1610	1810	1809	1610	1810	1809	1610
Queue Service Time (g _s), s		6.5	4.3	4.5	3.4	2.8	0.7	2.3	7.7	1.6	1.2	8.5	1.4
Cycle Queue Clearance Time (g _c), s		6.5	4.3	4.5	3.4	2.8	0.7	2.3	7.7	1.6	1.2	8.5	1.4
Green Ratio (g/C)		0.16	0.19	0.19	0.13	0.15	0.15	0.11	0.31	0.31	0.07	0.27	0.27
Capacity (c), veh/h		296	358	328	232	290	246	195	1107	493	130	977	435
Volume-to-Capacity Ratio (X)		0.787	0.492	0.510	0.534	0.394	0.101	0.427	0.570	0.140	0.333	0.671	0.128
Available Capacity (c _a), veh/h		691	726	665	691	1452	1230	1382	1382	615	691	2764	1230
Back of Queue (Q), veh/ln (50th percentile)		2.6	1.7	1.6	1.3	1.1	0.2	0.9	2.7	0.5	0.5	3.0	0.4
Queue Storage Ratio (RQ) (50th percentile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d ₁), s/veh		21.0	19.0	19.1	21.4	20.0	19.1	21.8	15.3	13.2	23.1	17.0	14.4
Incremental Delay (d ₂), s/veh		1.8	0.4	0.5	0.7	0.3	0.1	0.6	0.2	0.0	0.6	0.3	0.0
Initial Queue Delay (d ₃), s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh		22.8	19.4	19.5	22.1	20.3	19.1	22.4	15.4	13.2	23.7	17.3	14.5
Level of Service (LOS)		C	B	B	C	C	B	C	B	B	C	B	B
Approach Delay, s/veh / LOS		20.8	C		21.0	C		16.0	B		17.5	B	
Intersection Delay, s/veh / LOS		18.2						B					

Multimodal Results		EB		WB		NB		SB	
Pedestrian LOS Score / LOS		2.9	C	2.9	C	2.8	C	2.4	B
Bicyclist LOS Score / LOS		1.0	A	0.9	A	1.1	A	1.1	A

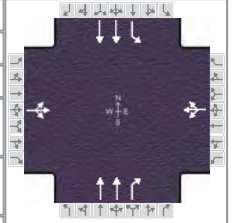
City of Riverside - Commission - Exhibit 10 - Development Review Committee Staff Report

Opening Year (2017) Without Project

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Main Street/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	OY (2017) Without Project		
Analysis Time Period	Morning Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Main Street/Riverside Avenue			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		742	36	93	703		
Peak-Hour Factor, PHF	1.00	0.95	0.95	0.95	0.95	1.00	
Hourly Flow Rate, HFR (veh/h)	0	781	37	97	740	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Two Way Left Turn Lane						
RT Channelized			0			0	
Lanes	0	2	1	1	2	0	
Configuration		T	R	L	T		
Upstream Signal		0			0		
Minor Street	Eastbound			Westbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)				34	0	131	
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.95	1.00	0.95	
Hourly Flow Rate, HFR (veh/h)	0	0	0	35	0	137	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	1	0	
Configuration					LTR		
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration		L		LTR			
v (veh/h)		97		172			
C (m) (veh/h)		819		505			
v/c		0.12		0.34			
95% queue length		0.40		1.50			
Control Delay (s/veh)		10.0		15.8			
LOS		A		C			
Approach Delay (s/veh)	--	--	15.8				
Approach LOS	--	--	C				

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Morning Peak Hour	PHF	0.95	
Intersection	Main Street/Riverside Avenue	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00	
File Name	AMOYWO11.xus					
Project Description	Center Street Warehouse - With Improvements					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	0	0	0	34	0	131		742	36	93	703	

Signal Information											
Cycle, s	52.3	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	14.0	10.6	15.7	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		8.0		7.3	1.0	4.0
Phase Duration, s		18.0		18.0		19.7	14.6	34.3
Change Period, (Y+R _c), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (MAH), s		0.0		3.3		3.0	3.1	3.0
Queue Clearance Time (g _s), s				6.5		12.1	3.4	7.7
Green Extension Time (g _e), s		0.0		0.3		3.1	0.2	4.1
Phase Call Probability				1.00		1.00	0.76	1.00
Max Out Probability				0.00		0.03	0.00	0.01

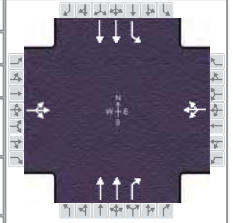
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16		8	18	7	4	
Adjusted Flow Rate (v), veh/h		0			174			781	38	98	740	
Adjusted Saturation Flow Rate (s), veh/h/ln		0			1610			1809	1610	1810	1809	
Queue Service Time (g _s), s		0.0			0.0			10.1	0.9	1.4	5.7	
Cycle Queue Clearance Time (g _c), s		0.0			4.5			10.1	0.9	1.4	5.7	
Green Ratio (g/C)					0.27			0.30	0.30	0.54	0.58	
Capacity (c), veh/h					514			1085	483	581	2097	
Volume-to-Capacity Ratio (X)		0.000			0.338			0.720	0.078	0.169	0.353	
Available Capacity (c _a), veh/h					994			2073	923	1250	2097	
Back of Queue (Q), veh/ln (50th percentile)		0.0			1.5			3.6	0.3	0.4	1.4	
Queue Storage Ratio (RQ) (50th percentile)		0.00			0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d ₁), s/veh					15.7			16.4	13.1	7.4	5.8	
Incremental Delay (d ₂), s/veh		0.0			0.1			0.3	0.0	0.1	0.0	
Initial Queue Delay (d ₃), s/veh		0.0			0.0			0.0	0.0	0.0	0.0	
Control Delay (d), s/veh					15.8			16.7	13.2	7.5	5.9	
Level of Service (LOS)					B			B	B	A	A	
Approach Delay, s/veh / LOS	0.0			15.8		B	16.5		B	6.0		A
Intersection Delay, s/veh / LOS	11.7						B					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.8		C	2.8		C	2.1		B	2.0		B
Bicycle LOS Score / LOS	0.5		A	0.8		A	1.2		A	1.2		A

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Main Street/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	OY (2017) Without Project		
Analysis Time Period	Evening Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Main Street/Riverside Avenue			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		791	100	170	947		
Peak-Hour Factor, PHF	1.00	0.93	0.93	0.93	0.93	1.00	
Hourly Flow Rate, HFR (veh/h)	0	850	107	182	1018	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Two Way Left Turn Lane						
RT Channelized			0			0	
Lanes	0	2	1	1	2	0	
Configuration		T	R	L	T		
Upstream Signal		0			0		
Minor Street	Eastbound			Westbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)				22	0	127	
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.93	1.00	0.93	
Hourly Flow Rate, HFR (veh/h)	0	0	0	23	0	136	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	1	0	
Configuration					LTR		
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration		L		LTR			
v (veh/h)		182		159			
C (m) (veh/h)		727		460			
v/c		0.25		0.35			
95% queue length		0.99		1.52			
Control Delay (s/veh)		11.6		16.9			
LOS		B		C			
Approach Delay (s/veh)	--	--	16.9				
Approach LOS	--	--	C				

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Evening Peak Hour	PHF	0.93	
Intersection	Main Street/Riverside Avenue	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00	
File Name	PMOYW011.xus					
Project Description	Center Street Warehouse - With Improvements					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	0	0	0	22	0	127		791	100	170	947	

Signal Information													
Cycle, s	51.5	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	12.0	11.1	16.4	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0			
				Red	0.0	0.0	0.0	0.0	0.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		8.0		7.3	1.0	4.0
Phase Duration, s		16.0		16.0		20.4	15.1	35.5
Change Period, (Y+R _c), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (MAH), s		0.0		3.3		3.0	3.1	3.0
Queue Clearance Time (g _s), s				6.3		12.8	4.5	9.8
Green Extension Time (g _e), s		0.0		0.3		3.1	0.3	5.5
Phase Call Probability				1.00		1.00	0.93	1.00
Max Out Probability				0.00		0.10	0.00	0.06

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16		8	18	7	4	
Adjusted Flow Rate (v), veh/h		0			160			851	108	183	1018	
Adjusted Saturation Flow Rate (s), veh/h/ln		0			1614			1809	1610	1810	1809	
Queue Service Time (g _s), s		0.0			0.0			10.8	2.5	2.5	7.8	
Cycle Queue Clearance Time (g _c), s		0.0			4.3			10.8	2.5	2.5	7.8	
Green Ratio (g/C)					0.23			0.32	0.32	0.57	0.61	
Capacity (c), veh/h					456			1151	512	602	2213	
Volume-to-Capacity Ratio (X)		0.000			0.351			0.739	0.210	0.304	0.460	
Available Capacity (c _a), veh/h					1009			2106	938	1265	2213	
Back of Queue (Q), veh/ln (50th percentile)		0.0			1.4			3.8	0.8	0.6	1.8	
Queue Storage Ratio (RQ) (50th percentile)		0.00			0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d ₁), s/veh					16.8			15.7	12.8	7.4	5.4	
Incremental Delay (d ₂), s/veh		0.0			0.2			0.4	0.1	0.1	0.1	
Initial Queue Delay (d ₃), s/veh		0.0			0.0			0.0	0.0	0.0	0.0	
Control Delay (d), s/veh					17.0			16.0	12.9	7.5	5.5	
Level of Service (LOS)					B			B	B	A	A	
Approach Delay, s/veh / LOS	0.0			17.0		B	15.7		B	5.8		A
Intersection Delay, s/veh / LOS	10.6						B					

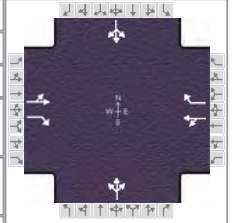
Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.8		C	2.8		C	2.1		B	2.0		B
Bicyclist LOS Score / LOS	0.5		A	0.8		A	1.3		A	1.5		A

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst		BC			Intersection		Orange Street/Center Street		
Agency/Co.		Kunzman Associates, Inc.			Jurisdiction		City of Riverside		
Date Performed		1/18/2016			Analysis Year		OY (2017) Without Project		
Analysis Time Period		Morning Peak Hour							
Project ID Center Street Warehouse									
East/West Street: Center Street					North/South Street: Orange Street				
Volume Adjustments and Site Characteristics									
Approach		Eastbound			Westbound				
Movement		L	T	R	L	T	R		
Volume (veh/h)		6	148	9	62	175	7		
%Thrus Left Lane									
Approach		Northbound			Southbound				
Movement		L	T	R	L	T	R		
Volume (veh/h)		9	1	49	8	1	4		
%Thrus Left Lane									
		Eastbound		Westbound		Northbound		Southbound	
		L1	L2	L1	L2	L1	L2	L1	L2
Configuration		LTR		LTR		LTR		LTR	
PHF		0.90		0.90		0.90		0.90	
Flow Rate (veh/h)		180		269		65		13	
% Heavy Vehicles		0		0		0		0	
No. Lanes		1		1		1		1	
Geometry Group		1		1		1		1	
Duration, T		0.25							
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.0		0.3		0.2		0.6		
Prop. Right-Turns	0.1		0.0		0.8		0.3		
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0		
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	
hadj, computed	-0.0		0.0		-0.5		-0.1		
Departure Headway and Service Time									
hd, initial value (s)	3.20		3.20		3.20		3.20		
x, initial	0.16		0.24		0.06		0.01		
hd, final value (s)	4.34		4.31		4.45		4.93		
x, final value	0.22		0.32		0.08		0.02		
Move-up time, m (s)	2.0		2.0		2.0		2.0		
Service Time, t _s (s)	2.3		2.3		2.4		2.9		
Capacity and Level of Service									
		Eastbound		Westbound		Northbound		Southbound	
		L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)		430		519		315		263	
Delay (s/veh)		8.54		9.35		7.83		8.02	
LOS		A		A		A		A	
Approach: Delay (s/veh)		8.54		9.35		7.83		8.02	
LOS		A		A		A		A	
Intersection Delay (s/veh)		8.85							
Intersection LOS		A							

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	BC				Intersection	Orange Street/Center Street			
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside			
Date Performed	1/18/2016				Analysis Year	OY (2017) Without Project			
Analysis Time Period	Evening Peak Hour								
Project ID Center Street Warehouse									
East/West Street: Center Street					North/South Street: Orange Street				
Volume Adjustments and Site Characteristics									
Approach	Eastbound				Westbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	3	268	9		71	129	7		
%Thrus Left Lane									
Approach	Northbound				Southbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	12	1	138		19	7	2		
%Thrus Left Lane									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LTR		LTR		LTR		LTR		
PHF	0.84		0.84		0.84		0.84		
Flow Rate (veh/h)	332		245		179		32		
% Heavy Vehicles	0		0		0		0		
No. Lanes	1		1		1		1		
Geometry Group	1		1		1		1		
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.0		0.3		0.1		0.7		
Prop. Right-Turns	0.0		0.0		0.9		0.1		
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0		
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	
hadj, computed	-0.0		0.0		-0.5		0.1		
Departure Headway and Service Time									
hd, initial value (s)	3.20		3.20		3.20		3.20		
x, initial	0.30		0.22		0.16		0.03		
hd, final value (s)	4.76		4.93		4.83		5.72		
x, final value	0.44		0.34		0.24		0.05		
Move-up time, m (s)	2.0		2.0		2.0		2.0		
Service Time, t _s (s)	2.8		2.9		2.8		3.7		
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity (veh/h)	582		495		429		282		
Delay (s/veh)	11.44		10.40		9.35		9.03		
LOS	B		B		A		A		
Approach: Delay (s/veh)	11.44		10.40		9.35		9.03		
LOS	B		B		A		A		
Intersection Delay (s/veh)	10.54								
Intersection LOS	B								

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Morning Peak Hour	PHF	0.91	
Intersection	Stephens Avenue/Center S	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00	
File Name	AMOYWO5.xus					
Project Description	Center Street Warehouse					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	1	124	78	315	184	7	60	2	104	9	10	1

Signal Information											
Cycle, s	52.1	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	22.0	4.1	13.9	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

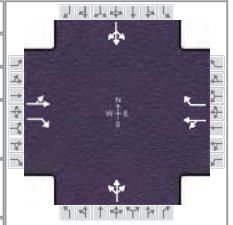
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		7.0		12.0		12.0
Phase Duration, s		26.0		26.0		17.9		8.1
Change Period, (Y+R _c), s		4.0		4.0		4.0		4.0
Max Allow Headway (MAH), s		3.2		3.2		3.3		3.1
Queue Clearance Time (g _s), s		4.3		20.3		6.6		2.6
Green Extension Time (g _e), s		1.7		1.7		0.3		0.0
Phase Call Probability		1.00		1.00		0.93		0.27
Max Out Probability		0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		137	86		548	8		182			22	
Adjusted Saturation Flow Rate (s), veh/h/ln		1899	1610		1449	1610		1680			1842	
Queue Service Time (g_s), s		0.0	1.7		16.1	0.1		4.6			0.6	
Cycle Queue Clearance Time (g_c), s		2.3	1.7		18.3	0.1		4.6			0.6	
Green Ratio (g/C)		0.42	0.42		0.42	0.42		0.27			0.08	
Capacity (c), veh/h		873	681		726	681		450			145	
Volume-to-Capacity Ratio (X)		0.157	0.126		0.755	0.011		0.406			0.151	
Available Capacity (c_a), veh/h		1524	1236		1225	1236		967			1060	
Back of Queue (Q), veh/ln (50th percentile)		0.8	0.5		4.8	0.0		1.6			0.2	
Queue Storage Ratio (RQ) (50th percentile)		0.00	0.00		0.00	0.00		0.00			0.00	
Uniform Delay (d_1), s/veh		9.3	9.2		14.0	8.7		15.7			22.4	
Incremental Delay (d_2), s/veh		0.0	0.0		0.6	0.0		0.2			0.2	
Initial Queue Delay (d_3), s/veh		0.0	0.0		0.0	0.0		0.0			0.0	
Control Delay (d), s/veh		9.4	9.2		14.6	8.7		15.9			22.6	
Level of Service (LOS)		A	A		B	A		B			C	
Approach Delay, s/veh / LOS	9.3	A		14.5	B		15.9	B		22.6	C	
Intersection Delay, s/veh / LOS	13.8						B					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.1	B		2.1	B		2.3	B		2.3	B	
Bicycle LOS Score / LOS	0.9	A		1.4	A		0.8	A		0.5	A	

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Evening Peak Hour	PHF	0.93	
Intersection	Stephens Avenue/Center S	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00	
File Name	PMOYWO5.xus					
Project Description	Center Street Warehouse					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	6	255	157	195	141	9	83	5	60	3	3	2

Signal Information											
Cycle, s	50.1	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	19.0	2.1	16.9	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

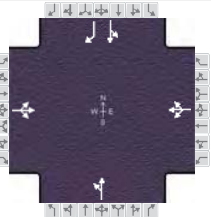
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		7.0		12.0		12.0
Phase Duration, s		23.0		23.0		20.9		6.1
Change Period, (Y+R _c), s		4.0		4.0		4.0		4.0
Max Allow Headway (MAH), s		3.3		3.3		3.2		3.1
Queue Clearance Time (g _s), s		7.4		12.8		5.4		2.2
Green Extension Time (g _e), s		1.8		1.8		0.3		0.0
Phase Call Probability		1.00		1.00		0.89		0.11
Max Out Probability		0.00		0.00		0.00		0.00

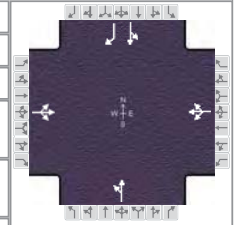
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		281	169		361	10		159			9	
Adjusted Saturation Flow Rate (s), veh/h/ln		1894	1610		1379	1610		1726			1786	
Queue Service Time (g_s), s		0.0	3.6		5.4	0.2		3.4			0.2	
Cycle Queue Clearance Time (g_c), s		5.4	3.6		10.8	0.2		3.4			0.2	
Green Ratio (g/C)		0.38	0.38		0.38	0.38		0.34			0.04	
Capacity (c), veh/h		792	611		637	611		583			77	
Volume-to-Capacity Ratio (X)		0.354	0.276		0.567	0.016		0.273			0.112	
Available Capacity (c_a), veh/h		1580	1286		1205	1286		1034			1070	
Back of Queue (Q), veh/ln (50th percentile)		1.8	1.1		2.7	0.1		1.1			0.1	
Queue Storage Ratio (RQ) (50th percentile)		0.00	0.00		0.00	0.00		0.00			0.00	
Uniform Delay (d_1), s/veh		11.3	10.8		12.9	9.7		12.1			23.1	
Incremental Delay (d_2), s/veh		0.1	0.1		0.3	0.0		0.1			0.2	
Initial Queue Delay (d_3), s/veh		0.0	0.0		0.0	0.0		0.0			0.0	
Control Delay (d), s/veh		11.4	10.9		13.2	9.7		12.2			23.3	
Level of Service (LOS)		B	B		B	A		B			C	
Approach Delay, s/veh / LOS	11.2	B		13.1	B		12.2	B		23.3	C	
Intersection Delay, s/veh / LOS	12.2						B					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.1	B		2.1	B		2.3	B		2.3	B	
Bicycle LOS Score / LOS	1.2	A		1.1	A		0.8	A		0.5	A	

ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	La Cadena/Stephens-I-215 SB		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	OY (2017) Without Project		
Analysis Time Period	Morning Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Stephens Avenue/I-215 FWY SB					North/South Street: La Cadena Drive			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	41	272	60		180	99	9	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	32	63	11		44	177	35	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LT	R	LT	R
PHF	0.95		0.95		0.95	0.95	0.95	0.95
Flow Rate (veh/h)	392		302		99	11	232	36
% Heavy Vehicles	0		0		0	0	0	0
No. Lanes	1		1		2		2	
Geometry Group	2		2		5		5	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.1		0.6		0.3	0.0	0.2	0.0
Prop. Right-Turns	0.2		0.0		0.0	1.0	0.0	1.0
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		0.1		0.2	-0.7	0.1	-0.7
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20	3.20	3.20	3.20
x, initial	0.35		0.27		0.09	0.01	0.21	0.03
hd, final value (s)	5.64		5.97		7.35	6.45	6.90	6.08
x, final value	0.61		0.50		0.20	0.02	0.44	0.06
Move-up time, m (s)	2.0		2.0		2.3		2.3	
Service Time, t _s (s)	3.6		4.0		5.0	4.2	4.6	3.8
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	612		552		349	261	482	286
Delay (s/veh)	17.22		14.80		11.90	9.28	15.01	9.17
LOS	C		B		B	A	C	A
Approach: Delay (s/veh)	17.22		14.80		11.64		14.22	
LOS	C		B		B		B	
Intersection Delay (s/veh)	15.22							
Intersection LOS	C							

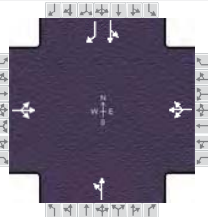
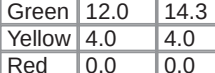
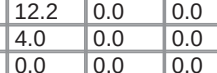
HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information									
Agency	Kunzman Associates, Inc.					Duration, h		0.25							
Analyst	BC		Analysis Date		1/18/2016		Area Type		Other						
Jurisdiction	Riverside		Time Period		Morning Peak Hour		PHF		0.95						
Intersection	La Cadena/Stephens-I-215		Analysis Year		OY (2017) Without Project		Analysis Period		1> 7:00						
File Name	AMOYWO6I.xus														
Project Description	Center Street Warehouse - With Improvements														
															
Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				41	272	60	180	99	9	32	63		44	177	35
Signal Information															
Cycle, s	52.6	Reference Phase	2	Green	16.1	13.7	10.8	0.0	0.0	0.0					
Offset, s	0	Reference Point	End	Yellow	4.0	4.0	4.0	0.0	0.0	0.0					
Uncoordinated	Yes	Simult. Gap E/W	On	Red	0.0	0.0	0.0	0.0	0.0	0.0					
Force Mode	Fixed	Simult. Gap N/S	On												
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase					2		6		8		4				
Case Number					8.0		8.0		12.0		11.0				
Phase Duration, s					20.1		20.1		14.8		17.7				
Change Period, (Y+R _c), s					4.0		4.0		4.0		4.0				
Max Allow Headway (MAH), s					3.3		3.3		3.1		3.1				
Queue Clearance Time (g _s), s					11.9		14.6		4.4		7.5				
Green Extension Time (g _e), s					1.5		1.5		0.1		0.5				
Phase Call Probability					1.00		1.00		0.77		0.98				
Max Out Probability					0.00		0.01		0.00		0.00				
Movement Group Results				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				5	2	12	1	6	16	3	8		7	4	14
Adjusted Flow Rate (v), veh/h					393			303			100			233	37
Adjusted Saturation Flow Rate (s), veh/h/ln					1813			1196			1869			1881	1610
Queue Service Time (g _s), s					0.0			2.7			2.4			5.5	0.9
Cycle Queue Clearance Time (g _c), s					9.9			12.6			2.4			5.5	0.9
Green Ratio (g/C)					0.31			0.31			0.20			0.26	0.26
Capacity (c), veh/h					631			477			382			491	420
Volume-to-Capacity Ratio (X)					0.622			0.635			0.262			0.474	0.088
Available Capacity (c _a), veh/h					1096			809			1066			1073	918
Back of Queue (Q), veh/ln (50th percentile)					3.6			2.9			0.9			2.1	0.3
Queue Storage Ratio (RQ) (50th percentile)					0.00			0.00			0.00			0.00	0.00
Uniform Delay (d ₁), s/veh					16.1			16.9			17.6			16.4	14.7
Incremental Delay (d ₂), s/veh					0.4			0.5			0.1			0.3	0.0
Initial Queue Delay (d ₃), s/veh					0.0			0.0			0.0			0.0	0.0
Control Delay (d), s/veh					16.5			17.4			17.7			16.7	14.7
Level of Service (LOS)					B			B			B			B	B
Approach Delay, s/veh / LOS				16.5	B		17.4	B		17.7	B		16.4	B	
Intersection Delay, s/veh / LOS				16.8						B					
Multimodal Results				EB			WB			NB			SB		
Pedestrian LOS Score / LOS				2.1	B		2.3	B		2.1	B		2.1	B	
Bicyclist LOS Score / LOS				1.1	A		1.0	A		0.7	A		0.9	A	



ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	La Cadena/Stephens-I-215 SB		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	OY (2017) Without Project		
Analysis Time Period	Evening Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Stephens Avenue/I-215 FWY SB					North/South Street: La Cadena Drive			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	59	189	66		87	65	5	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	31	158	16		68	366	49	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LT	R	LT	R
PHF	0.96		0.96		0.96	0.96	0.96	0.96
Flow Rate (veh/h)	325		162		196	16	451	51
% Heavy Vehicles	0		0		0	0	0	0
No. Lanes	1		1		2		2	
Geometry Group	2		2		5		5	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.2		0.6		0.2	0.0	0.2	0.0
Prop. Right-Turns	0.2		0.0		0.0	1.0	0.0	1.0
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		0.1		0.1	-0.7	0.1	-0.7
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20	3.20	3.20	3.20
x, initial	0.29		0.14		0.17	0.01	0.40	0.05
hd, final value (s)	6.48		7.12		7.33	6.53	6.76	5.96
x, final value	0.59		0.32		0.40	0.03	0.85	0.08
Move-up time, m (s)	2.0		2.0		2.3		2.3	
Service Time, t _s (s)	4.5		5.1		5.0	4.2	4.5	3.7
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	519		412		446	266	525	301
Delay (s/veh)	18.21		13.44		14.82	9.42	36.25	9.21
LOS	C		B		B	A	E	A
Approach: Delay (s/veh)	18.21		13.44		14.41		33.51	
LOS	C		B		B		D	
Intersection Delay (s/veh)	23.29							
Intersection LOS	C							

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information									
Agency	Kunzman Associates, Inc.					Duration, h		0.25							
Analyst	BC		Analysis Date		1/18/2016		Area Type		Other						
Jurisdiction	Riverside		Time Period		Morning Peak Hour		PHF		0.96						
Intersection	La Cadena/Stephens-I-215		Analysis Year		OY (2017) Without Project		Analysis Period		1> 7:00						
File Name	PMOYWO6I.xus														
Project Description	Center Street Warehouse - With Improvements														
Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				59	189	66	87	65	5	31	158		68	366	49
Signal Information															
Cycle, s	50.5	Reference Phase	2												
Offset, s	0	Reference Point	End												
Uncoordinated	Yes	Simult. Gap E/W	On												
Force Mode	Fixed	Simult. Gap N/S	On	Green	12.0	14.3	12.2	0.0	0.0	0.0	0.0	5	6	7	8
				Yellow	4.0	4.0	4.0	0.0	0.0	0.0	0.0				
				Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase					2		6		8		4				
Case Number					8.0		8.0		12.0		11.0				
Phase Duration, s					16.0		16.0		16.2		18.3				
Change Period, (Y+R _c), s					4.0		4.0		4.0		4.0				
Max Allow Headway (MAH), s					3.2		3.2		3.0		3.1				
Queue Clearance Time (g _s), s					10.8		6.7		6.5		13.4				
Green Extension Time (g _e), s					1.0		1.0		0.3		0.9				
Phase Call Probability					1.00		1.00		0.94		1.00				
Max Out Probability					0.00		0.00		0.00		0.00				
Movement Group Results				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				5	2	12	1	6	16	3	8		7	4	14
Adjusted Flow Rate (v), veh/h					327			164			197			452	51
Adjusted Saturation Flow Rate (s), veh/h/ln					1747			1405			1885			1885	1610
Queue Service Time (g _s), s					4.1			0.0			4.5			11.4	1.2
Cycle Queue Clearance Time (g _c), s					8.8			4.7			4.5			11.4	1.2
Green Ratio (g/C)					0.24			0.24			0.24			0.28	0.28
Capacity (c), veh/h					500			444			455			535	457
Volume-to-Capacity Ratio (X)					0.655			0.368			0.433			0.845	0.112
Available Capacity (c _a), veh/h					1106			934			1119			1119	956
Back of Queue (Q), veh/ln (50th percentile)					3.1			1.4			1.7			4.3	0.4
Queue Storage Ratio (RQ) (50th percentile)					0.00			0.00			0.00			0.00	0.00
Uniform Delay (d ₁), s/veh					18.0			16.3			16.2			17.1	13.4
Incremental Delay (d ₂), s/veh					0.5			0.2			0.2			1.4	0.0
Initial Queue Delay (d ₃), s/veh					0.0			0.0			0.0			0.0	0.0
Control Delay (d), s/veh					18.5			16.5			16.5			18.5	13.4
Level of Service (LOS)					B			B			B			B	B
Approach Delay, s/veh / LOS				18.5	B		16.5	B		16.5	B		18.0	B	
Intersection Delay, s/veh / LOS				17.7						B					
Multimodal Results				EB			WB			NB			SB		
Pedestrian LOS Score / LOS				2.1	B		2.3	B		2.1	B		2.1	B	
Bicyclist LOS Score / LOS				1.0	A		0.8	A		0.8	A		1.0	A	

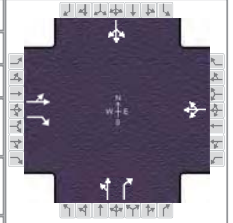
ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst		BC			Intersection		La Cadena/Highgrove-I-215 NB		
Agency/Co.		Kunzman Associates, Inc.			Jurisdiction		City of Riverside		
Date Performed		1/18/2016			Analysis Year		OY (2017) Without Project		
Analysis Time Period		Morning Peak Hour							
Project ID Center Street Warehouse									
East/West Street: Highgrove Place/I-215 FWY NB					North/South Street: La Cadena Drive				
Volume Adjustments and Site Characteristics									
Approach		Eastbound			Westbound				
Movement		L	T	R	L	T	R		
Volume (veh/h)		47	190	0	30	0	4		
%Thrus Left Lane									
Approach		Northbound			Southbound				
Movement		L	T	R	L	T	R		
Volume (veh/h)		0	33	40	1	80	0		
%Thrus Left Lane									
		Eastbound		Westbound		Northbound		Southbound	
		L1	L2	L1	L2	L1	L2	L1	L2
Configuration		LT		L	R	TR		LT	
PHF		0.89		0.89	0.89	0.89		0.89	
Flow Rate (veh/h)		265		33	4	81		90	
% Heavy Vehicles		0		0	0	0		0	
No. Lanes		1		2		1		1	
Geometry Group		4a		5		2		2	
Duration, T		0.25							
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns		0.2		1.0	0.0	0.0		0.0	
Prop. Right-Turns		0.0		0.0	1.0	0.5		0.0	
Prop. Heavy Vehicle		0.0		0.0	0.0	0.0		0.0	
hLT-adj		0.2	0.2	0.5	0.5	0.2	0.2	0.2	0.2
hRT-adj		-0.6	-0.6	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6
hHV-adj		1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed		0.0		0.5	-0.7	-0.3		0.0	
Departure Headway and Service Time									
hd, initial value (s)		3.20		3.20	3.20	3.20		3.20	
x, initial		0.24		0.03	0.00	0.07		0.08	
hd, final value (s)		4.51		5.65	4.44	4.41		4.72	
x, final value		0.33		0.05	0.00	0.10		0.12	
Move-up time, m (s)		2.0		2.3		2.0		2.0	
Service Time, t _s (s)		2.5		3.3	2.1	2.4		2.7	
Capacity and Level of Service									
		Eastbound		Westbound		Northbound		Southbound	
		L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)		515		283	254	331		340	
Delay (s/veh)		9.73		8.66	7.16	7.90		8.35	
LOS		A		A	A	A		A	
Approach: Delay (s/veh)		9.73		8.50		7.90		8.35	
LOS		A		A		A		A	
Intersection Delay (s/veh)		9.06							
Intersection LOS		A							

ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	La Cadena/Highgrove-I-215 NB		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	OY (2017) Without Project		
Analysis Time Period	Evening Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Highgrove Place/I-215 FWY NB					North/South Street: La Cadena Drive			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	27	231	0		20	0	3	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	0	98	68		1	159	0	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LT		L	R	TR		LT	
PHF	0.91		0.91	0.91	0.91		0.91	
Flow Rate (veh/h)	282		21	3	181		175	
% Heavy Vehicles	0		0	0	0		0	
No. Lanes	1		2		1		1	
Geometry Group	4a		5		2		2	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.1		1.0	0.0	0.0		0.0	
Prop. Right-Turns	0.0		0.0	1.0	0.4		0.0	
Prop. Heavy Vehicle	0.0		0.0	0.0	0.0		0.0	
hLT-adj	0.2	0.2	0.5	0.5	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.0		0.5	-0.7	-0.2		0.0	
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20	3.20	3.20		3.20	
x, initial	0.25		0.02	0.00	0.16		0.16	
hd, final value (s)	4.96		6.25	5.03	4.70		4.94	
x, final value	0.39		0.04	0.00	0.24		0.24	
Move-up time, m (s)	2.0		2.3		2.0		2.0	
Service Time, t _s (s)	3.0		3.9	2.7	2.7		2.9	
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	532		271	253	431		425	
Delay (s/veh)	11.08		9.18	7.75	9.15		9.50	
LOS	B		A	A	A		A	
Approach: Delay (s/veh)	11.08		9.00		9.15		9.50	
LOS	B		A		A		A	
Intersection Delay (s/veh)	10.06							
Intersection LOS	B							

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Highgrove Place/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	OY (2017) Without Project		
Analysis Time Period	Morning Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Highgrove Place			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	1	218	23	11	406	5	
Peak-Hour Factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	
Hourly Flow Rate, HFR (veh/h)	1	239	25	12	446	5	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	LT		R	LTR			
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	73	1	157	2	1	23	
Peak-Hour Factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	
Hourly Flow Rate, HFR (veh/h)	80	1	172	2	1	25	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	LT		R		LTR		
Delay, Queue Length, and Level of Service							
Approach	Eastbound	Westbound	Northbound			Southbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration	LT	LTR	LT		R		LTR
v (veh/h)	1	12	81		172		28
C (m) (veh/h)	1120	1312	324		805		537
v/c	0.00	0.01	0.25		0.21		0.05
95% queue length	0.00	0.03	0.97		0.81		0.16
Control Delay (s/veh)	8.2	7.8	19.8		10.7		12.1
LOS	A	A	C		B		B
Approach Delay (s/veh)	--	--	13.6			12.1	
Approach LOS	--	--	B			B	

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Morning Peak Hour	PHF	0.91	
Intersection	Highgrove Place/Center St	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00	
File Name	AMOYWO8I.xus					
Project Description	Center Street Warehouse - With Improvements					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	1	218	23	11	406	5	73	1	157	2	1	23

Signal Information											
Cycle, s	50.9	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	20.0	3.3	15.6	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		8.0		11.0		12.0
Phase Duration, s		24.0		24.0		19.6		7.3
Change Period, (Y+R _c), s		4.0		4.0		4.0		4.0
Max Allow Headway (MAH), s		3.1		3.1		3.3		3.3
Queue Clearance Time (g _s), s		6.5		12.0		6.2		2.8
Green Extension Time (g _e), s		1.4		1.3		0.5		0.0
Phase Call Probability		1.00		1.00		0.97		0.33
Max Out Probability		0.00		0.00		0.00		0.00

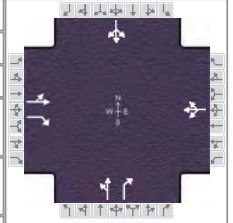
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		241	25		464			81	173		29	
Adjusted Saturation Flow Rate (s), veh/h/ln		1899	1610		1885			1811	1610		1634	
Queue Service Time (g _s), s		0.0	0.5		0.0			1.7	4.2		0.8	
Cycle Queue Clearance Time (g _c), s		4.5	0.5		10.0			1.7	4.2		0.8	
Green Ratio (g/C)		0.39	0.39		0.39			0.31	0.31		0.07	
Capacity (c), veh/h		817	633		814			554	492		107	
Volume-to-Capacity Ratio (X)		0.294	0.040		0.570			0.147	0.350		0.268	
Available Capacity (c _a), veh/h		1189	949		1180			783	696		482	
Back of Queue (Q), veh/ln (50th percentile)		1.5	0.1		3.4			0.6	1.3		0.3	
Queue Storage Ratio (RQ) (50th percentile)		0.00	0.00		0.00			0.00	0.00		0.00	
Uniform Delay (d ₁), s/veh		10.7	9.5		12.4			12.8	13.7		22.6	
Incremental Delay (d ₂), s/veh		0.1	0.0		0.2			0.0	0.2		0.5	
Initial Queue Delay (d ₃), s/veh		0.0	0.0		0.0			0.0	0.0		0.0	
Control Delay (d), s/veh		10.8	9.5		12.6			12.9	13.9		23.1	
Level of Service (LOS)		B	A		B			B	B		C	
Approach Delay, s/veh / LOS	10.7	B		12.6	B		13.6	B		23.1	C	
Intersection Delay, s/veh / LOS	12.7						B					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.2	B		2.1	B		2.1	B		2.3	B	
Bicycle LOS Score / LOS	0.9	A		1.3	A		0.9	A		0.5	A	

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Highgrove Place/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	OY (2017) Without Project		
Analysis Time Period	Evening Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Highgrove Place			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	2	265	16	8	242	9	
Peak-Hour Factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	
Hourly Flow Rate, HFR (veh/h)	2	276	16	8	252	9	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	LT		R	LTR			
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	65	2	238	5	1	19	
Peak-Hour Factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	
Hourly Flow Rate, HFR (veh/h)	67	2	247	5	1	19	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	LT		R		LTR		
Delay, Queue Length, and Level of Service							
Approach	Eastbound	Westbound	Northbound			Southbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration	LT	LTR	LT		R		LTR
v (veh/h)	2	8	69		247		25
C (m) (veh/h)	1315	1281	427		768		534
v/c	0.00	0.01	0.16		0.32		0.05
95% queue length	0.00	0.02	0.57		1.39		0.15
Control Delay (s/veh)	7.7	7.8	15.0		11.9		12.1
LOS	A	A	C		B		B
Approach Delay (s/veh)	--	--	12.6			12.1	
Approach LOS	--	--	B			B	

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Evening Peak Hour	PHF	0.91	
Intersection	Highgrove Place/Center St	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00	
File Name	PMOYWO8I.xus					
Project Description	Center Street Warehouse - With Improvements					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	2	265	16	8	242	9	65	2	238	5	1	19

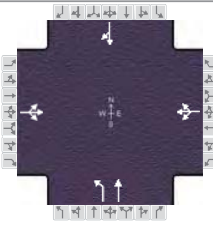
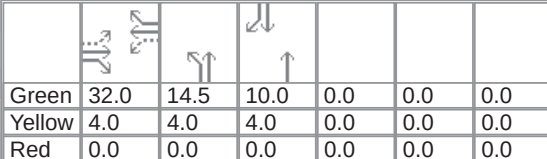
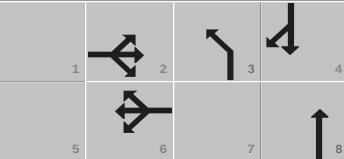
Signal Information											
Cycle, s	51.1	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	18.0	3.2	17.8	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		8.0		11.0		12.0
Phase Duration, s		22.0		22.0		21.8		7.2
Change Period, (Y+R _c), s		4.0		4.0		4.0		4.0
Max Allow Headway (MAH), s		3.1		3.1		3.3		3.3
Queue Clearance Time (g _s), s		8.0		7.9		8.4		2.8
Green Extension Time (g _e), s		1.1		1.1		0.6		0.0
Phase Call Probability		1.00		1.00		0.99		0.32
Max Out Probability		0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		293	18		285			74	262		27	
Adjusted Saturation Flow Rate (s), veh/h/ln		1898	1610		1875			1812	1610		1657	
Queue Service Time (g_s), s		0.0	0.4		0.0			1.4	6.4		0.8	
Cycle Queue Clearance Time (g_c), s		6.0	0.4		5.9			1.4	6.4		0.8	
Green Ratio (g/C)		0.35	0.35		0.35			0.35	0.35		0.06	
Capacity (c), veh/h		740	567		734			633	563		105	
Volume-to-Capacity Ratio (X)		0.397	0.031		0.388			0.116	0.465		0.262	
Available Capacity (c_a), veh/h		1184	946		1168			781	694		487	
Back of Queue (Q), veh/ln (50th percentile)		2.1	0.1		2.1			0.5	1.9		0.3	
Queue Storage Ratio (RQ) (50th percentile)		0.00	0.00		0.00			0.00	0.00		0.00	
Uniform Delay (d_1), s/veh		12.7	10.8		12.6			11.3	12.9		22.8	
Incremental Delay (d_2), s/veh		0.1	0.0		0.1			0.0	0.2		0.5	
Initial Queue Delay (d_3), s/veh		0.0	0.0		0.0			0.0	0.0		0.0	
Control Delay (d), s/veh		12.8	10.8		12.7			11.3	13.1		23.3	
Level of Service (LOS)		B	B		B			B	B		C	
Approach Delay, s/veh / LOS	12.7	B		12.7	B		12.7	B		23.3	C	
Intersection Delay, s/veh / LOS	13.0						B					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.3	B		2.1	B		2.1	B		2.3	B	
Bicycle LOS Score / LOS	1.0	A		1.0	A		1.0	A		1.0	A	

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information										
Agency		Kunzman Associates, Inc.				Duration, h		0.25								
Analyst		BC		Analysis Date		1/18/2016		Area Type		Other						
Jurisdiction		Riverside		Time Period		Morning Peak Hour		PHF		0.90						
Intersection		Iowa Avenue-I-215 NB Rar		Analysis Year		OY (2017) Without Project		Analysis Period		1> 7:00						
File Name		AMOYWO9.xus														
Project Description		Center Street Warehouse														
Demand Information				EB			WB			NB			SB			
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R	
Demand (v), veh/h				95	0	823	0	0	0	297	463			14	241	
Signal Information																
Cycle, s	68.5	Reference Phase	2			Green	32.0	14.5	10.0	0.0	0.0	0.0				
Offset, s	0	Reference Point	End			Yellow	4.0	4.0	4.0	0.0	0.0	0.0				
Uncoordinated	Yes	Simult. Gap E/W	On			Red	0.0	0.0	0.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On													
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT					
Assigned Phase					2		6	3	8		4					
Case Number					8.0		8.0	2.0	4.0		8.3					
Phase Duration, s					36.0		36.0	18.5	32.5		14.0					
Change Period, (Y+R _c), s					4.0		4.0	4.0	4.0		4.0					
Max Allow Headway (MAH), s					3.3		0.0	3.1	3.1		3.1					
Queue Clearance Time (g _s), s					34.0			14.0	16.9		12.0					
Green Extension Time (g _e), s					0.0		0.0	0.5	1.6		0.0					
Phase Call Probability					1.00			1.00	1.00		1.00					
Max Out Probability					1.00			0.00	0.00		1.00					
Movement Group Results				EB			WB			NB			SB			
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement				5	2	12	1	6	16	3	8		4		14	
Adjusted Flow Rate (v), veh/h					1020			0		330	514			283		
Adjusted Saturation Flow Rate (s), veh/h/ln					1600			0		1810	1900			1624		
Queue Service Time (g _s), s					25.6			0.0		12.0	14.9			10.0		
Cycle Queue Clearance Time (g _c), s					32.0			0.0		12.0	14.9			10.0		
Green Ratio (g/C)					0.47					0.21	0.42			0.15		
Capacity (c), veh/h					805					383	791			237		
Volume-to-Capacity Ratio (X)					1.267			0.000		0.861	0.651			1.196		
Available Capacity (c _a), veh/h					805					660	1109			237		
Back of Queue (Q), veh/ln (50th percentile)					40.5			0.0		5.0	5.7			11.7		
Queue Storage Ratio (RQ) (50th percentile)					0.00			0.00		0.00	0.00			0.00		
Uniform Delay (d ₁), s/veh					19.3					26.0	16.0			29.3		
Incremental Delay (d ₂), s/veh					129.9			0.0		2.2	0.3			121.6		
Initial Queue Delay (d ₃), s/veh					0.0			0.0		0.0	0.0			0.0		
Control Delay (d), s/veh					149.3					28.3	16.3			150.9		
Level of Service (LOS)					F					C	B			F		
Approach Delay, s/veh / LOS				149.3	F		0.0			21.0	C		150.9	F		
Intersection Delay, s/veh / LOS				99.0						F						
Multimodal Results				EB			WB			NB			SB			
Pedestrian LOS Score / LOS				2.2	B		2.1	B		2.1	B		2.1	B		
Bicycle LOS Score / LOS				2.2	B		2.1	B		2.1	B		2.1	B		

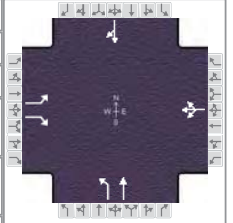
Planning Commission - Exhibit 4- Development Review Committee Staff Report

Development Review Committee - Exhibit 7- CEQA Documents

Attachment 3 - City Planning Commission Report and Exhibits - April 05, 2018

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Kunzman Associates, Inc.			Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other
Jurisdiction	Riverside	Time Period	Morning Peak Hour	PHF	0.90
Intersection	Iowa Avenue-I-215 NB Rar	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00
File Name	AMOYWO9I.xus				
Project Description	Center Street Warehouse				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	95		823	0	0	0	297	463			14	241

Signal Information											
Cycle, s	87.5	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	40.0	18.1	17.4	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

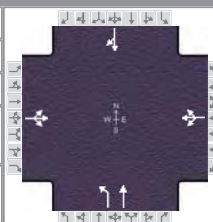
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		5.0		8.0	2.0	4.0		8.3
Phase Duration, s		44.0		44.0	22.1	43.5		21.4
Change Period, (Y+R _c), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (MAH), s		3.3		0.0	3.1	3.1		3.1
Queue Clearance Time (g _s), s		40.6			17.5	19.8		16.8
Green Extension Time (g _e), s		0.0		0.0	0.6	1.5		0.6
Phase Call Probability		1.00			1.00	1.00		1.00
Max Out Probability		1.00			0.00	0.01		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5		12	1	6	16	3	8			4	14
Adjusted Flow Rate (v), veh/h	106		914		0		330	514			283	
Adjusted Saturation Flow Rate (s), veh/h/ln	1810		1610		0		1810	1900			1624	
Queue Service Time (g _s), s	2.9		38.6		0.0		15.5	17.8			14.8	
Cycle Queue Clearance Time (g _c), s	2.9		38.6		0.0		15.5	17.8			14.8	
Green Ratio (g/C)	0.46		0.66				0.21	0.45			0.20	
Capacity (c), veh/h	910		1069				374	858			323	
Volume-to-Capacity Ratio (X)	0.116		0.855		0.000		0.882	0.600			0.878	
Available Capacity (c _a), veh/h	910		1069				827	858			742	
Back of Queue (Q), veh/ln (50th percentile)	1.1		12.7		0.0		6.8	7.4			5.9	
Queue Storage Ratio (RQ) (50th percentile)	0.00		0.00		0.00		0.00	0.00			0.00	
Uniform Delay (d ₁), s/veh	13.7		11.4				33.7	18.1			34.0	
Incremental Delay (d ₂), s/veh	0.0		6.6		0.0		2.7	0.8			3.0	
Initial Queue Delay (d ₃), s/veh	0.0		0.0		0.0		0.0	0.0			0.0	
Control Delay (d), s/veh	13.7		18.0				36.4	18.9			37.1	
Level of Service (LOS)	B		B				D	B			D	
Approach Delay, s/veh / LOS	17.6		B		0.0		25.7		C		37.1	
Intersection Delay, s/veh / LOS	23.4						C					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.3		B		2.1		B		1.4		A	
Bicyclist LOS Score / LOS	2.3		B		2.1		B		1.4		A	

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Evening Peak Hour	PHF	0.88	
Intersection	Iowa Avenue-I-215 NB Rar	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00	
File Name	PMOYWO9.xus					
Project Description	Center Street Warehouse					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	126	0	804	0	0	0	345	584			22	330

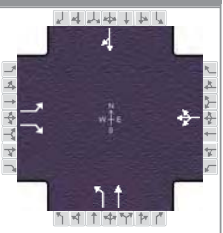
Signal Information											
Cycle, s	68.9	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	30.0	16.9	10.0	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		8.0		8.0	2.0	4.0		8.3
Phase Duration, s		34.0		34.0	20.9	34.9		14.0
Change Period, (Y+R _c), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (MAH), s		3.3		0.0	3.1	3.1		3.1
Queue Clearance Time (g _s), s		32.0			16.4	22.4		12.0
Green Extension Time (g _e), s		0.0		0.0	0.6	2.3		0.0
Phase Call Probability		1.00			1.00	1.00		1.00
Max Out Probability		1.00			0.02	0.01		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8			4	14
Adjusted Flow Rate (v), veh/h		1057			0		392	664			400	
Adjusted Saturation Flow Rate (s), veh/h/ln		1593			0		1810	1900			1626	
Queue Service Time (g _s), s		26.1			0.0		14.4	20.4			10.0	
Cycle Queue Clearance Time (g _c), s		30.0			0.0		14.4	20.4			10.0	
Green Ratio (g/C)		0.44					0.25	0.45			0.15	
Capacity (c), veh/h		752					445	853			236	
Volume-to-Capacity Ratio (X)		1.405			0.000		0.882	0.778			1.696	
Available Capacity (c _a), veh/h		752					656	1102			236	
Back of Queue (Q), veh/ln (50th percentile)		50.7			0.0		6.5	8.0			25.3	
Queue Storage Ratio (RQ) (50th percentile)		0.00			0.00		0.00	0.00			0.00	
Uniform Delay (d ₁), s/veh		20.6					25.0	16.1			29.5	
Incremental Delay (d ₂), s/veh		190.1			0.0		6.9	1.9			330.8	
Initial Queue Delay (d ₃), s/veh		0.0			0.0		0.0	0.0			0.0	
Control Delay (d), s/veh		210.7					32.0	18.0			360.3	
Level of Service (LOS)		F					C	B			F	
Approach Delay, s/veh / LOS	210.7	F		0.0			23.2	C		360.3	F	
Intersection Delay, s/veh / LOS	155.7						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.1	B	2.1	B	2.1	B
Bicycle LOS Score / LOS	2.2	B	0.5	A	2.2	B	1.1	A

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information												
Agency	Kunzman Associates, Inc.					Duration, h		0.25										
Analyst	BC		Analysis Date		1/18/2016		Area Type		Other									
Jurisdiction	Riverside		Time Period		Evening Peak Hour		PHF		0.88									
Intersection	Iowa Avenue-I-215 NB Rar		Analysis Year		OY (2017) Without Project		Analysis Period		1> 7:00									
File Name	PMOYW09I.xus																	
Project Description	Center Street Warehouse - With Improvements																	
Demand Information			EB			WB			NB			SB						
Approach Movement			L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h			126		804	0	0	0	345	584			22	330				
Signal Information																		
Cycle, s	79.1	Reference Phase	2															
Offset, s	0	Reference Point	End															
Uncoordinated	Yes	Simult. Gap E/W	On	Green	15.0	21.7	30.4	0.0	0.0	0.0								
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0								
				Red	0.0	0.0	0.0	0.0	0.0	0.0								
Timer Results			EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase					2				6				8				4	
Case Number					5.0				8.0				10.0				12.0	
Phase Duration, s					19.0				19.0				34.4				25.7	
Change Period, (Y+R _c), s					4.0				4.0				4.0				4.0	
Max Allow Headway (MAH), s					3.3				0.0				3.1				3.3	
Queue Clearance Time (g _s), s					17.0								28.1				20.8	
Green Extension Time (g _e), s					0.0				0.0				2.2				0.9	
Phase Call Probability					1.00								1.00				1.00	
Max Out Probability					1.00								0.00				0.00	
Movement Group Results			EB			WB			NB			SB						
Approach Movement			L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement			5		12	1	6	16	3	8			4	14				
Adjusted Flow Rate (v), veh/h			143		914		0		392	664			400					
Adjusted Saturation Flow Rate (s), veh/h/ln			1810		1610		0		1810	1900			1626					
Queue Service Time (g _s), s			5.5		15.0		0.0		13.5	26.1			18.8					
Cycle Queue Clearance Time (g _c), s			5.5		15.0		0.0		13.5	26.1			18.8					
Green Ratio (g/C)			0.19		0.57				0.38	0.38			0.27					
Capacity (c), veh/h			434		925				696	731			446					
Volume-to-Capacity Ratio (X)			0.330		0.988		0.000		0.563	0.908			0.897					
Available Capacity (c _a), veh/h			434		925				1600	1680			821					
Back of Queue (Q), veh/ln (50th percentile)			2.3		20.0		0.0		5.3	11.0			7.2					
Queue Storage Ratio (RQ) (50th percentile)			0.00		0.00		0.00		0.00	0.00			0.00					
Uniform Delay (d ₁), s/veh			28.2		16.6				19.1	23.0			27.7					
Incremental Delay (d ₂), s/veh			0.2		26.6		0.0		0.3	1.9			2.7					
Initial Queue Delay (d ₃), s/veh			0.0		0.0		0.0		0.0	0.0			0.0					
Control Delay (d), s/veh			28.4		43.2				19.4	24.9			30.3					
Level of Service (LOS)			C		D				B	C			C					
Approach Delay, s/veh / LOS			41.2		D		0.0		22.9	C		30.3		C				
Intersection Delay, s/veh / LOS			31.7						C									
Multimodal Results			EB			WB			NB			SB						
Pedestrian LOS Score / LOS			2.3		B	2.1		B	1.4		A	2.3		B				
Bicycle LOS Score / LOS			2.3		B	2.1		B	1.4		A	2.3		B				

City of Riverside Transportation Commission - Exhibit 1 - Development Review Committee Staff Report

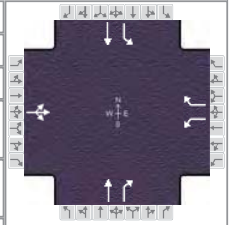
Planning Commission - Exhibit 1 - Development Review Committee Staff Report

Development Review Committee - Exhibit 7 - CEQA Documents

Attachment 3 - City Planning Commission Report and Exhibits - April 05, 2018

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Morning Peak Hour	PHF	0.82	
Intersection	Iowa Avenue/Main Street	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00	
File Name	AMOYWO10.xus					
Project Description	Center Street Warehouse					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	0	0	0	107		279		453	104	225	635	

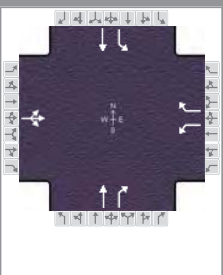
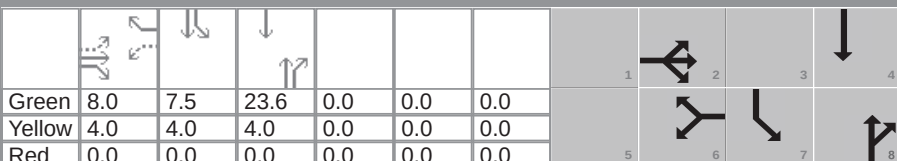
Signal Information											
Cycle, s	52.6	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	13.5	9.8	17.2	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		5.0		7.3	2.0	4.0
Phase Duration, s		17.5		17.5		21.2	13.8	35.0
Change Period, (Y+R _c), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (MAH), s		0.0		3.3		3.1	3.1	3.1
Queue Clearance Time (g _s), s				12.5		16.5	9.7	16.8
Green Extension Time (g _e), s		0.0		1.0		0.6	0.3	1.3
Phase Call Probability				1.00		1.00	0.98	1.00
Max Out Probability				0.00		0.91	0.15	0.98

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1		16		8	18	7	4	
Adjusted Flow Rate (v), veh/h		0		130		340		552	127	274	774	
Adjusted Saturation Flow Rate (s), veh/h/ln		0		1810		1610		1900	1610	1810	1900	
Queue Service Time (g _s), s		0.0		3.0		10.5		14.5	3.0	7.7	14.8	
Cycle Queue Clearance Time (g _c), s		0.0		3.0		10.5		14.5	3.0	7.7	14.8	
Green Ratio (g/C)				0.26		0.26		0.33	0.33	0.19	0.59	
Capacity (c), veh/h				603		415		622	527	338	1122	
Volume-to-Capacity Ratio (X)		0.000		0.216		0.820		0.888	0.240	0.811	0.690	
Available Capacity (c _a), veh/h				1511		1223		722	612	515	1122	
Back of Queue (Q), veh/ln (50th percentile)		0.0		1.1		3.5		7.1	0.9	3.1	4.2	
Queue Storage Ratio (RQ) (50th percentile)		0.00		0.00		0.00		0.00	0.00	0.00	0.00	
Uniform Delay (d ₁), s/veh				15.6		18.4		16.8	12.9	20.5	7.5	
Incremental Delay (d ₂), s/veh		0.0		0.1		1.6		10.7	0.1	3.1	1.5	
Initial Queue Delay (d ₃), s/veh		0.0		0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (d), s/veh				15.7		20.0		27.5	13.0	23.6	9.0	
Level of Service (LOS)				B		B		C	B	C	A	
Approach Delay, s/veh / LOS	0.0			18.8		B	24.8		C	12.8		B
Intersection Delay, s/veh / LOS	17.8						B					

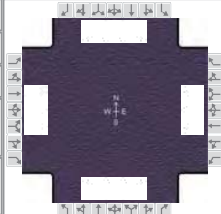
Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.3		B	2.3		B	2.3		B	1.3		A
Bicyclist LOS Score / LOS	0.5		A	0.5		A	1.6		A	2.7		B

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information													
Agency		Kunzman Associates, Inc.				Duration, h		0.25											
Analyst		BC		Analysis Date		1/18/2016		Area Type		Other									
Jurisdiction		Riverside		Time Period		Evening Peak Hour		PHF		0.95									
Intersection		Iowa Avenue/Main Street		Analysis Year		OY (2017) Without Project		Analysis Period		1> 7:00									
File Name		PMOYWO10.xus																	
Project Description		Center Street Warehouse																	
Demand Information				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h				0	0	0	117		171		780	127	118	712					
Signal Information																			
Cycle, s	51.1	Reference Phase	2																
Offset, s	0	Reference Point	End																
Uncoordinated	Yes	Simult. Gap E/W	On																
Force Mode	Fixed	Simult. Gap N/S	On	Green	8.0	7.5	23.6	0.0	0.0	0.0									
				Yellow	4.0	4.0	4.0	0.0	0.0	0.0									
				Red	0.0	0.0	0.0	0.0	0.0	0.0									
Timer Results				EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase						2				6				8		7		4	
Case Number						8.0				5.0				7.3		2.0		4.0	
Phase Duration, s						12.0				12.0				27.6		11.5		39.0	
Change Period, (Y+R _c), s						4.0				4.0				4.0		4.0		4.0	
Max Allow Headway (MAH), s						0.0				3.2				3.0		3.1		3.0	
Queue Clearance Time (g _s), s										7.4				22.9		5.2		12.5	
Green Extension Time (g _e), s						0.0				0.6				0.6		0.1		2.8	
Phase Call Probability										1.00				1.00		0.83		1.00	
Max Out Probability										0.00				1.00		0.00		0.47	
Movement Group Results				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement				5	2	12	1		16		8	18	7	4					
Adjusted Flow Rate (v), veh/h					0		123		180		821	134	124	749					
Adjusted Saturation Flow Rate (s), veh/h/ln					0		1810		1610		1900	1610	1810	1900					
Queue Service Time (g _s), s					0.0		3.1		5.4		20.9	2.5	3.2	10.5					
Cycle Queue Clearance Time (g _c), s					0.0		3.1		5.4		20.9	2.5	3.2	10.5					
Green Ratio (g/C)							0.16		0.16		0.46	0.46	0.15	0.69					
Capacity (c), veh/h							426		253		877	744	264	1304					
Volume-to-Capacity Ratio (X)					0.000		0.289		0.711		0.936	0.180	0.470	0.575					
Available Capacity (c _a), veh/h							1557		1260		929	788	531	1304					
Back of Queue (Q), veh/ln (50th percentile)					0.0		1.2		1.9		10.3	0.7	1.2	1.8					
Queue Storage Ratio (RQ) (50th percentile)					0.00		0.00		0.00		0.00	0.00	0.00	0.00					
Uniform Delay (d ₁), s/veh							19.5		20.4		13.0	8.1	20.0	4.2					
Incremental Delay (d ₂), s/veh					0.0		0.1		1.4		15.3	0.0	0.5	0.4					
Initial Queue Delay (d ₃), s/veh					0.0		0.0		0.0		0.0	0.0	0.0	0.0					
Control Delay (d), s/veh							19.6		21.8		28.4	8.1	20.5	4.6					
Level of Service (LOS)							B		C		C	A	C	A					
Approach Delay, s/veh / LOS				0.0			20.9		C	25.5		C	6.8		A				
Intersection Delay, s/veh / LOS				17.2						B									
Multimodal Results				EB			WB			NB			SB						
Pedestrian LOS Score / LOS				2.3	B		2.3	B		2.2	B		1.3	A					
Bicycle LOS Score / LOS				0.5	A		0.5	A		0.5	A		0.5	A					

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information							
Agency	Kunzman Associates, Inc.					Duration, h		0.25					
Analyst	BC		Analysis Date		1/18/2016		Area Type		Other				
Jurisdiction	Riverside		Time Period		Morning Peak Hour		PHF		0.90				
Intersection	Iowa Avenue/Center Street		Analysis Year		OY (2017) Without Project		Analysis Period		1> 7:00				
File Name	AMOYWO11.xus												
Project Description	Center Street Warehouse												



Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				85	189	82	131	265	57	71	353	82	29	596	85

Signal Information																	
Cycle, s	51.3	Reference Phase	2														
Offset, s	0	Reference Point	End	Green	6.7	1.2	9.1	3.3	2.8	12.3							
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	0.0	4.0							
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0							

Timer Results				EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase				5		2		1		6		3		8		7		4	
Case Number				2.0		4.0		2.0		3.0		2.0		3.0		2.0		3.0	
Phase Duration, s				10.7		13.1		11.9		14.3		10.1		19.0		7.3		16.3	
Change Period, (Y+R _c), s				4.0		4.0		4.0		4.0		4.0		4.0		4.0		4.0	
Max Allow Headway (MAH), s				3.1		3.1		3.1		3.1		3.1		3.1		3.1		3.1	
Queue Clearance Time (g _s), s				4.5		6.0		5.8		9.5		4.1		6.4		2.9		10.8	
Green Extension Time (g _e), s				0.1		1.0		0.2		0.8		0.1		2.3		0.0		1.5	
Phase Call Probability				0.74		1.00		0.87		1.00		0.68		1.00		0.37		1.00	
Max Out Probability				0.00		0.05		0.00		0.30		0.00		0.18		0.00		0.70	

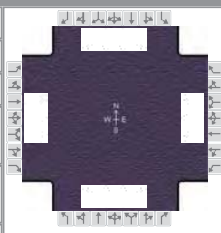
Movement Group Results				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement				5	2	12	1	6	16	3	8	18	7	4	14				
Adjusted Flow Rate (v), veh/h				94	155	146	146	294	63	79	392	91	32	662	94				
Adjusted Saturation Flow Rate (s), veh/h/ln				1810	1900	1708	1810	1900	1610	1810	1809	1610	1810	1809	1610				
Queue Service Time (g _s), s				2.5	3.7	4.0	3.8	7.5	1.7	2.1	4.4	2.2	0.9	8.8	2.4				
Cycle Queue Clearance Time (g _c), s				2.5	3.7	4.0	3.8	7.5	1.7	2.1	4.4	2.2	0.9	8.8	2.4				
Green Ratio (g/C)				0.13	0.18	0.18	0.15	0.20	0.20	0.12	0.29	0.29	0.06	0.24	0.24				
Capacity (c), veh/h				235	337	303	278	382	323	215	1059	472	117	865	385				
Volume-to-Capacity Ratio (X)				0.402	0.460	0.483	0.524	0.772	0.196	0.368	0.370	0.193	0.275	0.766	0.245				
Available Capacity (c _a), veh/h				529	555	499	529	555	470	529	1059	472	529	1057	470				
Back of Queue (Q), veh/ln (50th percentile)				1.0	1.5	1.4	1.5	3.1	0.6	0.8	1.5	0.7	0.4	3.4	0.8				
Queue Storage Ratio (RQ) (50th percentile)				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Uniform Delay (d ₁), s/veh				20.5	18.9	19.0	20.0	19.4	17.1	20.9	14.4	13.6	22.9	18.2	15.8				
Incremental Delay (d ₂), s/veh				0.4	0.4	0.4	0.6	2.1	0.1	0.4	0.1	0.1	0.5	2.1	0.1				
Initial Queue Delay (d ₃), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Control Delay (d), s/veh				20.9	19.3	19.4	20.6	21.5	17.2	21.2	14.5	13.7	23.3	20.3	15.9				
Level of Service (LOS)				C	B	B	C	C	B	C	B	B	C	C	B				
Approach Delay, s/veh / LOS				19.7		B		20.7		C		15.3		B		19.9		B	
Intersection Delay, s/veh / LOS				18.9						B									

Multimodal Results				EB			WB			NB			SB						
Pedestrian LOS Score / LOS				2.9		C		2.9		C		2.8		C		2.4		B	
Bicyclist LOS Score / LOS				0.8		A		1.3		A		1.0		A		1.1		A	

Commission - Exhibit 98 - Development Review Committee Staff Report

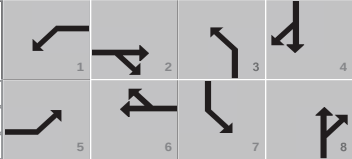
HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information							
Agency	Kunzman Associates, Inc.					Duration, h		0.25					
Analyst	BC		Analysis Date		1/18/2016		Area Type		Other				
Jurisdiction	Riverside		Time Period		Evening Peak Hour		PHF		0.97				
Intersection	Iowa Avenue/Center Street		Analysis Year		OY (2017) Without Project		Analysis Period		1> 7:00				
File Name	PMOYWO11.xus												
Project Description	Center Street Warehouse												



Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				177	249	83	125	109	25	86	656	70	44	671	56

Signal Information														
Cycle, s	51.9	Reference Phase	2											
Offset, s	0	Reference Point	End	Green	6.8	0.7	8.0	3.9	1.9	14.7				
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	0.0	4.0				
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0				



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	4.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	11.4	12.7	10.8	12.0	9.8	20.7	7.9	18.7
Change Period, (Y+R _c), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (MAH), s	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Queue Clearance Time (g _s), s	7.0	6.6	5.5	4.8	4.4	10.1	3.2	10.8
Green Extension Time (g _e), s	0.3	0.8	0.2	0.9	0.1	3.0	0.0	3.9
Phase Call Probability	0.93	1.00	0.84	1.00	0.72	1.00	0.48	1.00
Max Out Probability	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	182	176	167	129	112	26	89	676	72	45	692	58
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1900	1739	1810	1900	1610	1810	1809	1610	1810	1809	1610
Queue Service Time (g _s), s	5.0	4.4	4.6	3.5	2.8	0.7	2.4	8.1	1.7	1.2	8.8	1.4
Cycle Queue Clearance Time (g _c), s	5.0	4.4	4.6	3.5	2.8	0.7	2.4	8.1	1.7	1.2	8.8	1.4
Green Ratio (g/C)	0.14	0.17	0.17	0.13	0.15	0.15	0.11	0.32	0.32	0.07	0.28	0.28
Capacity (c), veh/h	259	317	290	236	292	248	202	1161	517	135	1026	457
Volume-to-Capacity Ratio (X)	0.705	0.554	0.575	0.547	0.384	0.104	0.439	0.583	0.140	0.337	0.674	0.126
Available Capacity (c _a), veh/h	696	731	669	696	1462	1239	1392	1392	619	696	2783	1239
Back of Queue (Q), veh/ln (50th percentile)	2.0	1.8	1.7	1.4	1.1	0.2	0.9	2.8	0.5	0.5	3.1	0.4
Queue Storage Ratio (RQ) (50th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d ₁), s/veh	21.2	19.9	20.0	21.2	19.8	18.9	21.6	14.7	12.6	22.8	16.5	13.8
Incremental Delay (d ₂), s/veh	1.3	0.6	0.7	0.7	0.3	0.1	0.6	0.2	0.0	0.5	0.3	0.0
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	22.5	20.5	20.6	21.9	20.1	19.0	22.1	14.9	12.6	23.4	16.8	13.9
Level of Service (LOS)	C	C	C	C	C	B	C	B	B	C	B	B
Approach Delay, s/veh / LOS	21.2	C		20.9	C		15.5	B		16.9	B	
Intersection Delay, s/veh / LOS	17.8						B					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.9	C		2.9	C		2.8	C		2.4	B	
Bicyclist LOS Score / LOS	0.9	A		0.9	A		1.2	A		1.1	A	

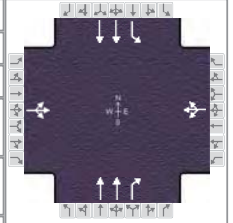
Opening Year (2017) With Project

Planning Commission - Exhibit 1 - Development Review Committee Staff Report
Development Review Committee - Exhibit 7 - CEQA Documents

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Main Street/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	OY (2017) With Project		
Analysis Time Period	Morning Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Main Street/Riverside Avenue			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		742	62	123	703		
Peak-Hour Factor, PHF	1.00	0.95	0.95	0.95	0.95	1.00	
Hourly Flow Rate, HFR (veh/h)	0	781	65	129	740	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Two Way Left Turn Lane						
RT Channelized			0			0	
Lanes	0	2	1	1	2	0	
Configuration		T	R	L	T		
Upstream Signal		0			0		
Minor Street	Eastbound			Westbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)				41	0	140	
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.95	1.00	0.95	
Hourly Flow Rate, HFR (veh/h)	0	0	0	43	0	147	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	1	0	
Configuration					LTR		
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration		L		LTR			
v (veh/h)		129		190			
C (m) (veh/h)		800		475			
v/c		0.16		0.40			
95% queue length		0.57		1.90			
Control Delay (s/veh)		10.4		17.5			
LOS		B		C			
Approach Delay (s/veh)	--	--	17.5				
Approach LOS	--	--	C				

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Morning Peak Hour	PHF	0.95	
Intersection	Main Street/Riverside Avenue	Analysis Year	OY (2017) With Project	Analysis Period	1> 7:00	
File Name	AMOYW11.xus					
Project Description	Center Street Warehouse - With Improvements					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	0	0	0	41	0	140		742	62	123	703	

Signal Information											
Cycle, s	53.3	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	14.0	11.9	15.3	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		8.0		7.3	1.0	4.0
Phase Duration, s		18.0		18.0		19.3	15.9	35.3
Change Period, (Y+R _c), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (MAH), s		0.0		3.3		3.0	3.1	3.0
Queue Clearance Time (g _s), s				7.1		12.4	3.8	7.7
Green Extension Time (g _e), s		0.0		0.4		2.4	0.2	4.1
Phase Call Probability				1.00		1.00	0.85	1.00
Max Out Probability				0.00		0.03	0.00	0.01

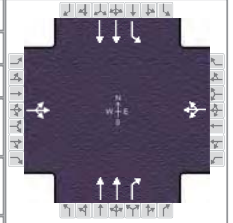
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16		8	18	7	4	
Adjusted Flow Rate (v), veh/h		0			191			781	65	129	740	
Adjusted Saturation Flow Rate (s), veh/h/ln		0			1606			1809	1610	1810	1809	
Queue Service Time (g _s), s		0.0			0.0			10.4	1.6	1.8	5.7	
Cycle Queue Clearance Time (g _c), s		0.0			5.1			10.4	1.6	1.8	5.7	
Green Ratio (g/C)					0.26			0.29	0.29	0.55	0.59	
Capacity (c), veh/h					505			1040	463	605	2123	
Volume-to-Capacity Ratio (X)		0.000			0.377			0.751	0.141	0.214	0.349	
Available Capacity (c _a), veh/h					976			2037	907	1218	2123	
Back of Queue (Q), veh/ln (50th percentile)		0.0			1.7			3.8	0.5	0.5	1.4	
Queue Storage Ratio (RQ) (50th percentile)		0.00			0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d ₁), s/veh					16.3			17.2	14.1	7.6	5.7	
Incremental Delay (d ₂), s/veh		0.0			0.2			0.4	0.1	0.1	0.0	
Initial Queue Delay (d ₃), s/veh		0.0			0.0			0.0	0.0	0.0	0.0	
Control Delay (d), s/veh					16.5			17.7	14.1	7.7	5.7	
Level of Service (LOS)					B			B	B	A	A	
Approach Delay, s/veh / LOS	0.0			16.5		B	17.4		B	6.0		A
Intersection Delay, s/veh / LOS	12.1						B					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.8		C	2.8		C	2.1		B	2.0		B
Bicyclist LOS Score / LOS	0.5		A	0.8		A	1.2		A	1.2		A

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Main Street/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	OY (2017) With Project		
Analysis Time Period	Evening Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Main Street/Riverside Avenue			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		791	112	184	947		
Peak-Hour Factor, PHF	1.00	0.93	0.93	0.93	0.93	1.00	
Hourly Flow Rate, HFR (veh/h)	0	850	120	197	1018	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Two Way Left Turn Lane						
RT Channelized			0			0	
Lanes	0	2	1	1	2	0	
Configuration		T	R	L	T		
Upstream Signal		0			0		
Minor Street	Eastbound			Westbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)				44	0	152	
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.93	1.00	0.93	
Hourly Flow Rate, HFR (veh/h)	0	0	0	47	0	163	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	1	0	
Configuration					LTR		
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration		L		LTR			
v (veh/h)		197		210			
C (m) (veh/h)		719		390			
v/c		0.27		0.54			
95% queue length		1.11		3.08			
Control Delay (s/veh)		11.9		24.5			
LOS		B		C			
Approach Delay (s/veh)	--	--	24.5				
Approach LOS	--	--	C				

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Evening Peak Hour	PHF	0.93	
Intersection	Main Street/Riverside Avenue	Analysis Year	OY (2017) With Project	Analysis Period	1> 7:00	
File Name	PMOYW11.xus					
Project Description	Center Street Warehouse - With Improvements					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	0	0	0	44	0	152		791	112	184	947	

Signal Information											
Cycle, s	51.7	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	12.0	11.3	16.4	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		8.0		7.3	1.0	4.0
Phase Duration, s		16.0		16.0		20.4	15.3	35.7
Change Period, (Y+R _c), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (MAH), s		0.0		3.3		3.0	3.1	3.0
Queue Clearance Time (g _s), s				7.9		12.9	4.7	9.8
Green Extension Time (g _e), s		0.0		0.4		3.0	0.3	5.5
Phase Call Probability				1.00		1.00	0.94	1.00
Max Out Probability				0.00		0.10	0.00	0.06

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16		8	18	7	4	
Adjusted Flow Rate (v), veh/h		0			211			851	120	198	1018	
Adjusted Saturation Flow Rate (s), veh/h/ln		0			1602			1809	1610	1810	1809	
Queue Service Time (g _s), s		0.0			1.7			10.9	2.9	2.7	7.8	
Cycle Queue Clearance Time (g _c), s		0.0			5.9			10.9	2.9	2.7	7.8	
Green Ratio (g/C)					0.23			0.32	0.32	0.57	0.61	
Capacity (c), veh/h					458			1145	510	605	2217	
Volume-to-Capacity Ratio (X)		0.000			0.461			0.743	0.236	0.327	0.459	
Available Capacity (c _a), veh/h					1004			2101	935	1260	2217	
Back of Queue (Q), veh/ln (50th percentile)		0.0			1.9			3.8	0.9	0.7	1.8	
Queue Storage Ratio (RQ) (50th percentile)		0.00			0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d ₁), s/veh					17.4			15.8	13.0	7.5	5.4	
Incremental Delay (d ₂), s/veh		0.0			0.3			0.4	0.1	0.1	0.1	
Initial Queue Delay (d ₃), s/veh		0.0			0.0			0.0	0.0	0.0	0.0	
Control Delay (d), s/veh					17.7			16.1	13.1	7.7	5.4	
Level of Service (LOS)					B			B	B	A	A	
Approach Delay, s/veh / LOS	0.0			17.7		B	15.8		B	5.8		A
Intersection Delay, s/veh / LOS	10.9						B					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.8		C	2.8		C	2.1		B	2.0		B
Bicyclist LOS Score / LOS	0.5		A	0.8		A	1.3		A	1.5		A

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	BC			Intersection	Project West Acc/Center Street			
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside			
Date Performed	1/18/2016			Analysis Year	OY (2017) With Project			
Analysis Time Period	Morning Peak Hour							
Project Description Center Street Warehouse								
East/West Street: Center Street				North/South Street: Project West Access				
Intersection Orientation: East-West				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)		182	38	64	193			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95		
Hourly Flow Rate, HFR (veh/h)	0	191	40	67	203	0		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	1	1	1	0		
Configuration		T	R	L	T			
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	11	0	18					
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95		
Hourly Flow Rate, HFR (veh/h)	11	0	18	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	0	0	0	0		
Configuration		LTR						
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	LTR					
v (veh/h)		67	29					
C (m) (veh/h)		1349	666					
v/c		0.05	0.04					
95% queue length		0.16	0.14					
Control Delay (s/veh)		7.8	10.7					
LOS		A	B					
Approach Delay (s/veh)	--	--	10.7					
Approach LOS	--	--	B					

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Project West Acc/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	OY (2017) With Project		
Analysis Time Period	Evening Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Project West Access			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		289	17	30	159		
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly Flow Rate, HFR (veh/h)	0	304	17	31	167	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	1	1	1	0	
Configuration		T	R	L	T		
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	31	0	53				
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly Flow Rate, HFR (veh/h)	32	0	55	0	0	0	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	0	0	0	0	
Configuration		LTR					
Delay, Queue Length, and Level of Service							
Approach	Eastbound	Westbound	Northbound			Southbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration		L	LTR				
v (veh/h)		31	87				
C (m) (veh/h)		1250	628				
v/c		0.02	0.14				
95% queue length		0.08	0.48				
Control Delay (s/veh)		8.0	11.7				
LOS		A	B				
Approach Delay (s/veh)	--	--	11.7				
Approach LOS	--	--	B				

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	BC			Intersection	Project East Acc/Center Street			
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside			
Date Performed	1/18/2016			Analysis Year	OY (2017) With Project			
Analysis Time Period	Morning Peak Hour							
Project Description Center Street Warehouse								
East/West Street: Center Street				North/South Street: Project East Access				
Intersection Orientation: East-West				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)		182	18	115	252			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95		
Hourly Flow Rate, HFR (veh/h)	0	191	18	121	265	0		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	1	1	1	0		
Configuration		T	R	L	T			
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	5	0	32					
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95		
Hourly Flow Rate, HFR (veh/h)	5	0	33	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	0	0	0	0		
Configuration		LTR						
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LTR				
v (veh/h)		121		38				
C (m) (veh/h)		1374		732				
v/c		0.09		0.05				
95% queue length		0.29		0.16				
Control Delay (s/veh)		7.9		10.2				
LOS		A		B				
Approach Delay (s/veh)	--	--	10.2					
Approach LOS	--	--	B					

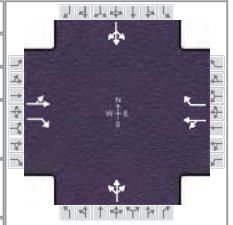
TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Project East Acc/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	OY (2017) With Project		
Analysis Time Period	Evening Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Project East Access			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		333	8	53	174		
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly Flow Rate, HFR (veh/h)	0	350	8	55	183	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	1	1	1	0	
Configuration		T	R	L	T		
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	15	0	95				
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly Flow Rate, HFR (veh/h)	15	0	100	0	0	0	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	0	0	0	0	
Configuration		LTR					
Delay, Queue Length, and Level of Service							
Approach	Eastbound	Westbound	Northbound			Southbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration		L	LTR				
v (veh/h)		55	115				
C (m) (veh/h)		1212	643				
v/c		0.05	0.18				
95% queue length		0.14	0.65				
Control Delay (s/veh)		8.1	11.8				
LOS		A	B				
Approach Delay (s/veh)	--	--	11.8				
Approach LOS	--	--	B				

ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	Orange Street/Center Street		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	OY (2017) With Project		
Analysis Time Period	Morning Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Center Street					North/South Street: Orange Street			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	6	193	13		62	342	7	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	22	1	49		8	1	4	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.90		0.90		0.90		0.90	
Flow Rate (veh/h)	234		455		79		13	
% Heavy Vehicles	0		0		0		0	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.0		0.1		0.3		0.6	
Prop. Right-Turns	0.1		0.0		0.7		0.3	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.0		0.0		-0.3		-0.1	
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.21		0.40		0.07		0.01	
hd, final value (s)	4.62		4.44		5.13		5.55	
x, final value	0.30		0.56		0.11		0.02	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t _s (s)	2.6		2.4		3.1		3.6	
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	484		705		329		263	
Delay (s/veh)	9.59		12.97		8.78		8.66	
LOS	A		B		A		A	
Approach: Delay (s/veh)	9.59		12.97		8.78		8.66	
LOS	A		B		A		A	
Intersection Delay (s/veh)	11.47							
Intersection LOS	B							

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst		BC			Intersection		Orange Street/Center Street		
Agency/Co.		Kunzman Associates, Inc.			Jurisdiction		City of Riverside		
Date Performed		1/18/2016			Analysis Year		OY (2017) With Project		
Analysis Time Period		Evening Peak Hour							
Project ID Center Street Warehouse									
East/West Street: Center Street					North/South Street: Orange Street				
Volume Adjustments and Site Characteristics									
Approach		Eastbound			Westbound				
Movement		L	T	R	L	T	R		
Volume (veh/h)		3	405	20	71	206	7		
%Thrus Left Lane									
Approach		Northbound			Southbound				
Movement		L	T	R	L	T	R		
Volume (veh/h)		18	1	138	19	7	2		
%Thrus Left Lane									
		Eastbound		Westbound		Northbound		Southbound	
		L1	L2	L1	L2	L1	L2	L1	L2
Configuration		LTR		LTR		LTR		LTR	
PHF		0.84		0.84		0.84		0.84	
Flow Rate (veh/h)		508		337		186		32	
% Heavy Vehicles		0		0		0		0	
No. Lanes		1		1		1		1	
Geometry Group		1		1		1		1	
Duration, T		0.25							
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.0		0.2		0.1		0.7		
Prop. Right-Turns	0.0		0.0		0.9		0.1		
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0		
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	
hadj, computed	-0.0		0.0		-0.5		0.1		
Departure Headway and Service Time									
hd, initial value (s)	3.20		3.20		3.20		3.20		
x, initial	0.45		0.30		0.17		0.03		
hd, final value (s)	5.03		5.31		5.59		6.60		
x, final value	0.71		0.50		0.29		0.06		
Move-up time, m (s)	2.0		2.0		2.0		2.0		
Service Time, t _s (s)	3.0		3.3		3.6		4.6		
Capacity and Level of Service									
		Eastbound		Westbound		Northbound		Southbound	
		L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)		701		587		436		282	
Delay (s/veh)		19.36		13.43		10.84		10.01	
LOS		C		B		B		B	
Approach: Delay (s/veh)		19.36		13.43		10.84		10.01	
LOS		C		B		B		B	
Intersection Delay (s/veh)		15.71							
Intersection LOS		C							

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Morning Peak Hour	PHF	0.91	
Intersection	Stephens Avenue/Center S	Analysis Year	OY (2017) With Project	Analysis Period	1> 7:00	
File Name	AMOYW5.xus					
Project Description	Center Street Warehouse					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	1	148	99	315	276	7	135	2	104	9	10	1

Signal Information											
Cycle, s	59.9	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	28.5	4.6	14.8	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		7.0		12.0		12.0
Phase Duration, s		32.5		32.5		18.8		8.6
Change Period, (Y+R _c), s		4.0		4.0		4.0		4.0
Max Allow Headway (MAH), s		3.2		3.2		3.2		3.1
Queue Clearance Time (g _s), s		5.0		26.5		10.2		2.7
Green Extension Time (g _e), s		2.2		1.9		0.5		0.0
Phase Call Probability		1.00		1.00		0.99		0.31
Max Out Probability		0.00		0.03		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		164	109		649	8		265			22	
Adjusted Saturation Flow Rate (s), veh/h/ln		1899	1610		1482	1610		1718			1842	
Queue Service Time (g _s), s		0.0	2.3		21.7	0.2		8.2			0.7	
Cycle Queue Clearance Time (g _c), s		3.0	2.3		24.5	0.2		8.2			0.7	
Green Ratio (g/C)		0.48	0.48		0.48	0.48		0.25			0.08	
Capacity (c), veh/h		964	766		797	766		425			142	
Volume-to-Capacity Ratio (X)		0.170	0.142		0.815	0.010		0.624			0.155	
Available Capacity (c _a), veh/h		1325	1074		1080	1074		859			921	
Back of Queue (Q), veh/ln (50th percentile)		1.0	0.7		7.1	0.0		3.0			0.3	
Queue Storage Ratio (RQ) (50th percentile)		0.00	0.00		0.00	0.00		0.00			0.00	
Uniform Delay (d ₁), s/veh		9.0	8.8		14.7	8.3		20.1			25.9	
Incremental Delay (d ₂), s/veh		0.0	0.0		2.6	0.0		0.6			0.2	
Initial Queue Delay (d ₃), s/veh		0.0	0.0		0.0	0.0		0.0			0.0	
Control Delay (d), s/veh		9.0	8.9		17.2	8.3		20.7			26.0	
Level of Service (LOS)		A	A		B	A		C			C	
Approach Delay, s/veh / LOS	9.0	A		17.1	B		20.7	C		26.0	C	
Intersection Delay, s/veh / LOS	16.2						B					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.1	B		2.1	B		2.3	B		2.3	B	
Bicyclist LOS Score / LOS	0.9	A		1.6	A		0.9	A		0.5	A	

HCS 2010 Signalized Intersection Results Summary

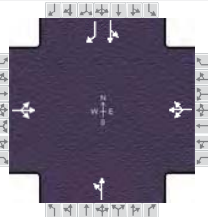
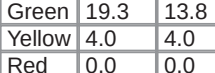
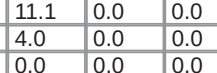
General Information					Intersection Information															
Agency		Kunzman Associates, Inc.			Duration, h		0.25													
Analyst		BC		Analysis Date		1/18/2016		Area Type						Other						
Jurisdiction		Riverside		Time Period		Evening Peak Hour		PHF						0.93						
Intersection		Stephens Avenue/Center S		Analysis Year		OY (2017) With Project		Analysis Period						1> 7:00						
File Name		PMOYW5.xus																		
Project Description		Center Street Warehouse																		
Demand Information					EB			WB			NB			SB						
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h					6	328	221	195	184	9	118	5	60	3	3	2				
Signal Information																				
Cycle, s	51.0	Reference Phase	2																	
Offset, s	0	Reference Point	End																	
Uncoordinated	Yes	Simult. Gap E/W	On																	
Force Mode	Fixed	Simult. Gap N/S	On																	
Green					19.0	2.2	17.8	0.0	0.0	0.0										
Yellow					4.0	4.0	4.0	0.0	0.0	0.0										
Red					0.0	0.0	0.0	0.0	0.0	0.0										
Timer Results					EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase							2				6				8				4	
Case Number							7.0				7.0				12.0				12.0	
Phase Duration, s							23.0				23.0				21.8				6.2	
Change Period, (Y+R _c), s							4.0				4.0				4.0				4.0	
Max Allow Headway (MAH), s							3.3				3.3				3.2				3.1	
Queue Clearance Time (g _s), s							9.5				15.7				6.2				2.2	
Green Extension Time (g _e), s							2.4				2.4				0.4				0.0	
Phase Call Probability							1.00				1.00				0.94				0.11	
Max Out Probability							0.00				0.00				0.00				0.00	
Movement Group Results					EB			WB			NB			SB						
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement					5	2	12	1	6	16	3	8	18	7	4	14				
Adjusted Flow Rate (v), veh/h						359	238		408	10		197			9					
Adjusted Saturation Flow Rate (s), veh/h/ln						1895	1610		1355	1610		1741			1786					
Queue Service Time (g _s), s						0.0	5.5		6.2	0.2		4.2			0.2					
Cycle Queue Clearance Time (g _c), s						7.5	5.5		13.7	0.2		4.2			0.2					
Green Ratio (g/C)						0.37	0.37		0.37	0.37		0.35			0.04					
Capacity (c), veh/h						778	600		612	600		609			77					
Volume-to-Capacity Ratio (X)						0.462	0.396		0.666	0.016		0.323			0.112					
Available Capacity (c _a), veh/h						1551	1262		1162	1262		1023			1050					
Back of Queue (Q), veh/ln (50th percentile)						2.6	1.6		3.4	0.1		1.4			0.1					
Queue Storage Ratio (RQ) (50th percentile)						0.00	0.00		0.00	0.00		0.00			0.00					
Uniform Delay (d ₁), s/veh						12.4	11.8		14.2	10.1		12.2			23.5					
Incremental Delay (d ₂), s/veh						0.2	0.2		0.5	0.0		0.1			0.2					
Initial Queue Delay (d ₃), s/veh						0.0	0.0		0.0	0.0		0.0			0.0					
Control Delay (d), s/veh						12.6	11.9		14.7	10.1		12.3			23.7					
Level of Service (LOS)						B	B		B	B		B			C					
Approach Delay, s/veh / LOS					12.3	B		14.6	B		12.3	B		23.7	C					
Intersection Delay, s/veh / LOS					13.2						B									
Multimodal Results					EB			WB			NB			SB						
Pedestrian LOS Score / LOS					2.1	B		2.1	B		2.3	B		2.3	B					
Bicycle LOS Score / LOS					1.5	A		1.2	A		0.8	A		0.5	A					

Planning Commission - Exhibit 4- Development Review Committee Staff Report

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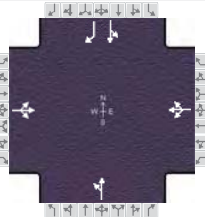
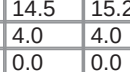
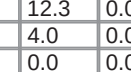
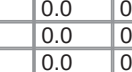
ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	La Cadena/Stephens-I-215 SB		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	OY (2017) With Project		
Analysis Time Period	Morning Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Stephens Avenue/I-215 FWY SB					North/South Street: La Cadena Drive			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	43	292	60		180	167	9	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	32	63	11		44	177	42	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LT	R	LT	R
PHF	0.95		0.95		0.95	0.95	0.95	0.95
Flow Rate (veh/h)	415		373		99	11	232	44
% Heavy Vehicles	0		0		0	0	0	0
No. Lanes	1		1		2		2	
Geometry Group	2		2		5		5	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.1		0.5		0.3	0.0	0.2	0.0
Prop. Right-Turns	0.2		0.0		0.0	1.0	0.0	1.0
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		0.1		0.2	-0.7	0.1	-0.7
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20	3.20	3.20	3.20
x, initial	0.37		0.33		0.09	0.01	0.21	0.04
hd, final value (s)	5.91		6.12		7.79	6.89	7.27	6.44
x, final value	0.68		0.63		0.21	0.02	0.47	0.08
Move-up time, m (s)	2.0		2.0		2.3		2.3	
Service Time, t _s (s)	3.9		4.1		5.5	4.6	5.0	4.1
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	588		564		349	261	459	294
Delay (s/veh)	20.57		19.14		12.60	9.74	16.20	9.69
LOS	C		C		B	A	C	A
Approach: Delay (s/veh)	20.57		19.14		12.32		15.16	
LOS	C		C		B		C	
Intersection Delay (s/veh)	18.07							
Intersection LOS	C							

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information												
Agency	Kunzman Associates, Inc.					Duration, h		0.25										
Analyst	BC		Analysis Date		1/18/2016		Area Type		Other									
Jurisdiction	Riverside		Time Period		Morning Peak Hour		PHF		0.95									
Intersection	La Cadena/Stephens-I-215		Analysis Year		OY (2017) With Project		Analysis Period		1> 7:00									
File Name	AMOYW6I.xus																	
Project Description	Center Street Warehouse - With Improvements																	
Demand Information				EB			WB			NB			SB					
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R			
Demand (v), veh/h				43	292	60	180	167	9	32	63		44	177	42			
Signal Information																		
Cycle, s	56.1	Reference Phase	2															
Offset, s	0	Reference Point	End															
Uncoordinated	Yes	Simult. Gap E/W	On															
Force Mode	Fixed	Simult. Gap N/S	On	Green	19.3	13.8	11.1	0.0	0.0	0.0	0.0	Yellow	4.0	4.0	4.0	0.0	0.0	0.0
				Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT							
Assigned Phase					2		6		8		4							
Case Number					8.0		8.0		12.0		11.0							
Phase Duration, s					23.3		23.3		15.1		17.8							
Change Period, (Y+R _c), s					4.0		4.0		4.0		4.0							
Max Allow Headway (MAH), s					3.3		3.3		3.1		3.1							
Queue Clearance Time (g _s), s					12.8		17.6		4.5		8.0							
Green Extension Time (g _e), s					1.8		1.6		0.1		0.5							
Phase Call Probability					1.00		1.00		0.79		0.99							
Max Out Probability					0.01		0.03		0.00		0.00							
Movement Group Results				EB			WB			NB			SB					
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R			
Assigned Movement				5	2	12	1	6	16	3	8		7	4	14			
Adjusted Flow Rate (v), veh/h					416			375			100			233	44			
Adjusted Saturation Flow Rate (s), veh/h/ln					1805			1271			1869			1881	1610			
Queue Service Time (g _s), s					0.0			4.8			2.5			6.0	1.2			
Cycle Queue Clearance Time (g _c), s					10.8			15.6			2.5			6.0	1.2			
Green Ratio (g/C)					0.34			0.34			0.20			0.25	0.25			
Capacity (c), veh/h					690			533			368			463	396			
Volume-to-Capacity Ratio (X)					0.602			0.704			0.271			0.502	0.112			
Available Capacity (c _a), veh/h					1025			786			999			1006	861			
Back of Queue (Q), veh/ln (50th percentile)					3.9			3.9			1.0			2.3	0.4			
Queue Storage Ratio (RQ) (50th percentile)					0.00			0.00			0.00			0.00	0.00			
Uniform Delay (d ₁), s/veh					15.6			17.1			19.1			18.2	16.4			
Incremental Delay (d ₂), s/veh					0.3			0.6			0.1			0.3	0.0			
Initial Queue Delay (d ₃), s/veh					0.0			0.0			0.0			0.0	0.0			
Control Delay (d), s/veh					16.0			17.8			19.3			18.5	16.4			
Level of Service (LOS)					B			B			B			B	B			
Approach Delay, s/veh / LOS				16.0	B		17.8	B		19.3	B		18.2	B				
Intersection Delay, s/veh / LOS				17.3						B								
Multimodal Results				EB			WB			NB			SB					
Pedestrian LOS Score / LOS				2.1	B		2.3	B		2.1	B		2.1	B				
Bicyclist LOS Score / LOS				1.2	A		1.1	A		0.7	A		0.9	A				

ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	La Cadena/Stephens-I-215 SB		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	OY (2017) With Project		
Analysis Time Period	Evening Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Stephens Avenue/I-215 FWY SB					North/South Street: La Cadena Drive			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	64	248	66		87	97	5	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	31	158	16		68	366	52	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LT	R	LT	R
PHF	0.96		0.96		0.96	0.96	0.96	0.96
Flow Rate (veh/h)	392		196		196	16	451	54
% Heavy Vehicles	0		0		0	0	0	0
No. Lanes	1		1		2		2	
Geometry Group	2		2		5		5	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.2		0.5		0.2	0.0	0.2	0.0
Prop. Right-Turns	0.2		0.0		0.0	1.0	0.0	1.0
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		0.1		0.1	-0.7	0.1	-0.7
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20	3.20	3.20	3.20
x, initial	0.35		0.17		0.17	0.01	0.40	0.05
hd, final value (s)	6.86		7.62		8.03	7.22	7.32	6.52
x, final value	0.75		0.41		0.44	0.03	0.92	0.10
Move-up time, m (s)	2.0		2.0		2.3		2.3	
Service Time, t _s (s)	4.9		5.6		5.7	4.9	5.0	4.2
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	503		431		412	266	487	304
Delay (s/veh)	27.41		15.91		16.84	10.16	49.51	9.93
LOS	D		C		C	B	E	A
Approach: Delay (s/veh)	27.41		15.91		16.33		45.28	
LOS	D		C		C		E	
Intersection Delay (s/veh)	30.80							
Intersection LOS	D							

HCS 2010 Signalized Intersection Results Summary

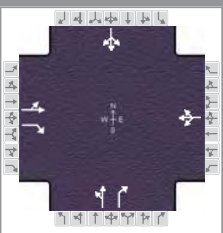
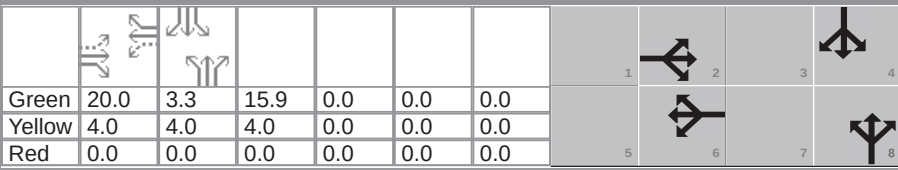
General Information						Intersection Information									
Agency		Kunzman Associates, Inc.				Duration, h		0.25							
Analyst		BC		Analysis Date		1/18/2016		Area Type		Other					
Jurisdiction		Riverside		Time Period		Evening Peak Hour		PHF		0.96					
Intersection		La Cadena/Stephens-I-215		Analysis Year		OY (2017) With Project		Analysis Period		1> 7:00					
File Name		PMOYW6I.xus													
Project Description		Center Street Warehouse - With Improvements													
Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				64	248	66	87	97	5	31	158		68	366	52
Signal Information															
Cycle, s	54.0	Reference Phase	2												
Offset, s	0	Reference Point	End												
Uncoordinated	Yes	Simult. Gap E/W	On												
Force Mode	Fixed	Simult. Gap N/S	On	Green	14.5	15.2	12.3	0.0	0.0	0.0					
				Yellow	4.0	4.0	4.0	0.0	0.0	0.0					
				Red	0.0	0.0	0.0	0.0	0.0	0.0					
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase					2		6		8		4				
Case Number					8.0		8.0		12.0		11.0				
Phase Duration, s					18.5		18.5		16.3		19.2				
Change Period, (Y+R _c), s					4.0		4.0		4.0		4.0				
Max Allow Headway (MAH), s					3.2		3.2		3.0		3.1				
Queue Clearance Time (g _s), s					13.3		8.1		6.9		14.3				
Green Extension Time (g _e), s					1.2		1.2		0.3		0.9				
Phase Call Probability					1.00		1.00		0.95		1.00				
Max Out Probability					0.00		0.00		0.00		0.00				
Movement Group Results				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				5	2	12	1	6	16	3	8		7	4	14
Adjusted Flow Rate (v), veh/h					394			197			197			452	54
Adjusted Saturation Flow Rate (s), veh/h/ln					1758			1371			1885			1885	1610
Queue Service Time (g _s), s					5.3			0.0			4.9			12.3	1.4
Cycle Queue Clearance Time (g _c), s					11.3			6.1			4.9			12.3	1.4
Green Ratio (g/C)					0.27			0.27			0.23			0.28	0.28
Capacity (c), veh/h					550			466			430			530	453
Volume-to-Capacity Ratio (X)					0.715			0.423			0.458			0.853	0.120
Available Capacity (c _a), veh/h					1040			864			1045			1045	893
Back of Queue (Q), veh/ln (50th percentile)					4.1			1.8			1.9			4.8	0.4
Queue Storage Ratio (RQ) (50th percentile)					0.00			0.00			0.00			0.00	0.00
Uniform Delay (d ₁), s/veh					18.5			16.4			18.0			18.4	14.5
Incremental Delay (d ₂), s/veh					0.7			0.2			0.3			1.5	0.0
Initial Queue Delay (d ₃), s/veh					0.0			0.0			0.0			0.0	0.0
Control Delay (d), s/veh					19.2			16.6			18.3			19.9	14.5
Level of Service (LOS)					B			B			B			B	B
Approach Delay, s/veh / LOS				19.2	B		16.6	B		18.3	B		19.3	B	
Intersection Delay, s/veh / LOS				18.7						B					
Multimodal Results				EB			WB			NB			SB		
Pedestrian LOS Score / LOS				2.1	B		2.3	B		2.1	B		2.1	B	
Bicyclist LOS Score / LOS				1.1	A		0.8	A		0.8	A		1.1	A	

ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	La Cadena/Highgrove-I-215 NB		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	OY (2017) With Project		
Analysis Time Period	Morning Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Highgrove Place/I-215 FWY NB					North/South Street: La Cadena Drive			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	47	262	0		30	0	4	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	0	33	40		1	80	0	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LT		L	R	TR		LT	
PHF	0.89		0.89	0.89	0.89		0.89	
Flow Rate (veh/h)	346		33	4	81		90	
% Heavy Vehicles	0		0	0	0		0	
No. Lanes	1		2		1		1	
Geometry Group	4a		5		2		2	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.2		1.0	0.0	0.0		0.0	
Prop. Right-Turns	0.0		0.0	1.0	0.5		0.0	
Prop. Heavy Vehicle	0.0		0.0	0.0	0.0		0.0	
hLT-adj	0.2	0.2	0.5	0.5	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.0		0.5	-0.7	-0.3		0.0	
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20	3.20	3.20		3.20	
x, initial	0.31		0.03	0.00	0.07		0.08	
hd, final value (s)	4.52		5.74	4.53	4.61		4.92	
x, final value	0.43		0.05	0.01	0.10		0.12	
Move-up time, m (s)	2.0		2.3		2.0		2.0	
Service Time, t _s (s)	2.5		3.4	2.2	2.6		2.9	
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	596		283	254	331		340	
Delay (s/veh)	10.94		8.76	7.26	8.15		8.61	
LOS	B		A	A	A		A	
Approach: Delay (s/veh)	10.94		8.60		8.15		8.61	
LOS	B		A		A		A	
Intersection Delay (s/veh)	10.00-							
Intersection LOS	A							

ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	BC				Intersection	La Cadena/Highgrove-I-215 NB		
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside		
Date Performed	1/18/2016				Analysis Year	OY (2017) With Project		
Analysis Time Period	Evening Peak Hour							
Project ID Center Street Warehouse								
East/West Street: Highgrove Place/I-215 FWY NB					North/South Street: La Cadena Drive			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	27	264	0		20	0	3	
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume (veh/h)	0	98	68		1	159	0	
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LT		L	R	TR		LT	
PHF	0.91		0.91	0.91	0.91		0.91	
Flow Rate (veh/h)	319		21	3	181		175	
% Heavy Vehicles	0		0	0	0		0	
No. Lanes	1		2		1		1	
Geometry Group	4a		5		2		2	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.1		1.0	0.0	0.0		0.0	
Prop. Right-Turns	0.0		0.0	1.0	0.4		0.0	
Prop. Heavy Vehicle	0.0		0.0	0.0	0.0		0.0	
hLT-adj	0.2	0.2	0.5	0.5	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.0		0.5	-0.7	-0.2		0.0	
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20	3.20	3.20		3.20	
x, initial	0.28		0.02	0.00	0.16		0.16	
hd, final value (s)	4.98		6.32	5.10	4.81		5.05	
x, final value	0.44		0.04	0.00	0.24		0.25	
Move-up time, m (s)	2.0		2.3		2.0		2.0	
Service Time, t _s (s)	3.0		4.0	2.8	2.8		3.1	
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	569		271	253	431		425	
Delay (s/veh)	11.85		9.26	7.82	9.34		9.69	
LOS	B		A	A	A		A	
Approach: Delay (s/veh)	11.85		9.08		9.34		9.69	
LOS	B		A		A		A	
Intersection Delay (s/veh)	10.57							
Intersection LOS	B							

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Highgrove Place/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	OY (2017) With Project		
Analysis Time Period	Morning Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Highgrove Place			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	1	242	23	11	425	5	
Peak-Hour Factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	
Hourly Flow Rate, HFR (veh/h)	1	265	25	12	467	5	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	LT		R	LTR			
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	145	1	157	2	1	23	
Peak-Hour Factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	
Hourly Flow Rate, HFR (veh/h)	159	1	172	2	1	25	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	LT		R		LTR		
Delay, Queue Length, and Level of Service							
Approach	Eastbound	Westbound	Northbound			Southbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration	LT	LTR	LT		R		LTR
v (veh/h)	1	12	160		172		28
C (m) (veh/h)	1100	1283	302		779		516
v/c	0.00	0.01	0.53		0.22		0.05
95% queue length	0.00	0.03	2.90		0.84		0.17
Control Delay (s/veh)	8.3	7.8	29.6		10.9		12.4
LOS	A	A	D		B		B
Approach Delay (s/veh)	--	--	19.9			12.4	
Approach LOS	--	--	C			B	

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information															
Agency		Kunzman Associates, Inc.				Duration, h		0.25													
Analyst		BC		Analysis Date		1/18/2016		Area Type		Other											
Jurisdiction		Riverside		Time Period		Morning Peak Hour		PHF		0.91											
Intersection		Highgrove Place/Center St		Analysis Year		OY (2017) With Project		Analysis Period		1> 7:00											
File Name		AMOYW8I.xus																			
Project Description		Center Street Warehouse - With Improvements																			
Demand Information						EB			WB			NB			SB						
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h						1	242	23	11	425	5	145	1	157	2	1	23				
Signal Information																					
Cycle, s		51.2	Reference Phase		2																
Offset, s		0	Reference Point		End																
Uncoordinated		Yes	Simult. Gap E/W		On																
Force Mode		Fixed	Simult. Gap N/S		On																
Green						20.0	3.3	15.9	0.0	0.0	0.0										
Yellow						4.0	4.0	4.0	0.0	0.0	0.0										
Red						0.0	0.0	0.0	0.0	0.0	0.0										
Timer Results						EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase								2				6				8				4	
Case Number								7.0				8.0				11.0				12.0	
Phase Duration, s								24.0				24.0				19.9				7.3	
Change Period, (Y+R _c), s								4.0				4.0				4.0				4.0	
Max Allow Headway (MAH), s								3.1				3.1				3.2				3.3	
Queue Clearance Time (g _s), s								7.1				12.7				6.2				2.9	
Green Extension Time (g _e), s								1.5				1.4				0.6				0.0	
Phase Call Probability								1.00				1.00				0.99				0.33	
Max Out Probability								0.00				0.00				0.00				0.00	
Movement Group Results						EB			WB			NB			SB						
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement						5	2	12	1	6	16	3	8	18	7	4	14				
Adjusted Flow Rate (v), veh/h							267	25		485			160	173		29					
Adjusted Saturation Flow Rate (s), veh/h/ln							1899	1610		1885			1810	1610		1634					
Queue Service Time (g _s), s							0.0	0.5		0.0			3.4	4.2		0.9					
Cycle Queue Clearance Time (g _c), s							5.1	0.5		10.7			3.4	4.2		0.9					
Green Ratio (g/C)							0.39	0.39		0.39			0.31	0.31		0.07					
Capacity (c), veh/h							812	629		808			561	499		107					
Volume-to-Capacity Ratio (X)							0.329	0.040		0.599			0.286	0.346		0.268					
Available Capacity (c _a), veh/h							1182	943		1173			778	692		479					
Back of Queue (Q), veh/ln (50th percentile)							1.7	0.1		3.7			1.2	1.3		0.3					
Queue Storage Ratio (RQ) (50th percentile)							0.00	0.00		0.00			0.00	0.00		0.00					
Uniform Delay (d ₁), s/veh							11.1	9.7		12.8			13.4	13.7		22.8					
Incremental Delay (d ₂), s/veh							0.1	0.0		0.3			0.1	0.2		0.5					
Initial Queue Delay (d ₃), s/veh							0.0	0.0		0.0			0.0	0.0		0.0					
Control Delay (d), s/veh							11.1	9.7		13.0			13.5	13.8		23.3					
Level of Service (LOS)							B	A		B			B	B		C					
Approach Delay, s/veh / LOS						11.0		B		13.0		B		13.7		B		23.3		C	
Intersection Delay, s/veh / LOS						13.0						B									
Multimodal Results						EB			WB			NB			SB						
Pedestrian LOS Score / LOS						2.2		B		2.1		B		2.1		B		2.3		B	
Bicycle LOS Score / LOS						1.0		A		1.3		A		1.0		A		0.5		A	

City of Los Angeles - Commission - Exhibit 10 - Development Review Committee Staff Report

Planning Commission - Exhibit 4- Development Review Committee Staff Report

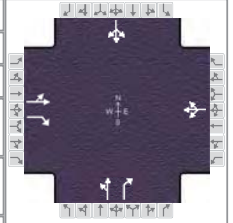
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Attachment 3 - City Planning Commission Report and Exhibits - April 05, 2018

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	BC			Intersection	Highgrove Place/Center Street		
Agency/Co.	Kunzman Associates, Inc.			Jurisdiction	City of Riverside		
Date Performed	1/18/2016			Analysis Year	OY (2017) With Project		
Analysis Time Period	Evening Peak Hour						
Project Description Center Street Warehouse							
East/West Street: Center Street				North/South Street: Highgrove Place			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	2	338	16	8	251	9	
Peak-Hour Factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	
Hourly Flow Rate, HFR (veh/h)	2	352	16	8	261	9	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	LT		R	LTR			
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	98	2	238	5	1	19	
Peak-Hour Factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	
Hourly Flow Rate, HFR (veh/h)	102	2	247	5	1	19	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	LT		R		LTR		
Delay, Queue Length, and Level of Service							
Approach	Eastbound	Westbound	Northbound			Southbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration	LT	LTR	LT		R		LTR
v (veh/h)	2	8	104		247		25
C (m) (veh/h)	1305	1202	373		696		485
v/c	0.00	0.01	0.28		0.35		0.05
95% queue length	0.00	0.02	1.12		1.60		0.16
Control Delay (s/veh)	7.8	8.0	18.3		13.0		12.8
LOS	A	A	C		B		B
Approach Delay (s/veh)	--	--	14.6			12.8	
Approach LOS	--	--	B			B	

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Kunzman Associates, Inc.			Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other
Jurisdiction	Riverside	Time Period	Evening Peak Hour	PHF	0.91
Intersection	Highgrove Place/Center St	Analysis Year	OY (2017) With Project	Analysis Period	1> 7:00
File Name	PMOYW8I.xus				
Project Description	Center Street Warehouse - With Improvements				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	2	338	16	8	251	9	98	2	238	5	1	19

Signal Information											
Cycle, s	51.1	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	18.0	3.2	17.9	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

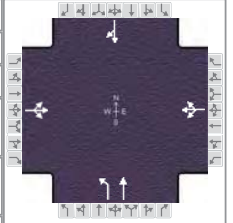
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		8.0		11.0		12.0
Phase Duration, s		22.0		22.0		21.9		7.2
Change Period, (Y+R _c), s		4.0		4.0		4.0		4.0
Max Allow Headway (MAH), s		3.1		3.1		3.3		3.3
Queue Clearance Time (g _s), s		10.1		8.1		8.4		2.8
Green Extension Time (g _e), s		1.2		1.3		0.7		0.0
Phase Call Probability		1.00		1.00		0.99		0.32
Max Out Probability		0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h		374	18		295			110	262		27	
Adjusted Saturation Flow Rate (s), veh/h/ln		1899	1610		1874			1811	1610		1657	
Queue Service Time (g _s), s		0.0	0.4		0.0			2.1	6.4		0.8	
Cycle Queue Clearance Time (g _c), s		8.1	0.4		6.1			2.1	6.4		0.8	
Green Ratio (g/C)		0.35	0.35		0.35			0.35	0.35		0.06	
Capacity (c), veh/h		739	567		732			634	564		105	
Volume-to-Capacity Ratio (X)		0.506	0.031		0.402			0.173	0.464		0.262	
Available Capacity (c _a), veh/h		1183	945		1164			779	693		486	
Back of Queue (Q), veh/ln (50th percentile)		2.9	0.1		2.2			0.7	1.9		0.3	
Queue Storage Ratio (RQ) (50th percentile)		0.00	0.00		0.00			0.00	0.00		0.00	
Uniform Delay (d ₁), s/veh		13.4	10.9		12.7			11.5	12.9		22.8	
Incremental Delay (d ₂), s/veh		0.2	0.0		0.1			0.0	0.2		0.5	
Initial Queue Delay (d ₃), s/veh		0.0	0.0		0.0			0.0	0.0		0.0	
Control Delay (d), s/veh		13.6	10.9		12.9			11.5	13.1		23.3	
Level of Service (LOS)		B	B		B			B	B		C	
Approach Delay, s/veh / LOS	13.4	B		12.9	B		12.6	B		23.3	C	
Intersection Delay, s/veh / LOS	13.3						B					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.3	B		2.1	B		2.1	B		2.3	B	
Bicycle LOS Score / LOS	1.1	A		1.0	A		1.1	A		0.5	A	

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Morning Peak Hour	PHF	0.90	
Intersection	Iowa Avenue-I-215 NB Rar	Analysis Year	OY (2017) With Project	Analysis Period	1> 7:00	
File Name	AMOYW9.xus					
Project Description	Center Street Warehouse					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	95	0	823	0	0	0	297	482			14	241

Signal Information											
Cycle, s	67.3	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	31.0	14.3	10.0	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

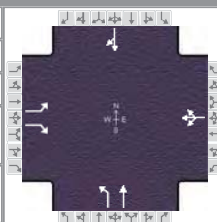
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		8.0		8.0	2.0	4.0		8.3
Phase Duration, s		35.0		35.0	18.3	32.3		14.0
Change Period, (Y+R _c), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (MAH), s		3.3		0.0	3.1	3.1		3.1
Queue Clearance Time (g _s), s		33.0			13.8	17.3		12.0
Green Extension Time (g _e), s		0.0		0.0	0.5	1.7		0.0
Phase Call Probability		1.00			1.00	1.00		1.00
Max Out Probability		1.00			0.00	0.00		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8			4	14
Adjusted Flow Rate (v), veh/h		1020			0		330	536			283	
Adjusted Saturation Flow Rate (s), veh/h/ln		1600			0		1810	1900			1624	
Queue Service Time (g _s), s		24.7			0.0		11.8	15.3			10.0	
Cycle Queue Clearance Time (g _c), s		31.0			0.0		11.8	15.3			10.0	
Green Ratio (g/C)		0.46					0.21	0.42			0.15	
Capacity (c), veh/h		796					384	799			241	
Volume-to-Capacity Ratio (X)		1.281			0.000		0.858	0.670			1.174	
Available Capacity (c _a), veh/h		796					672	1129			241	
Back of Queue (Q), veh/ln (50th percentile)		41.1			0.0		4.9	5.8			11.2	
Queue Storage Ratio (RQ) (50th percentile)		0.00			0.00		0.00	0.00			0.00	
Uniform Delay (d ₁), s/veh		19.2					25.5	15.7			28.6	
Incremental Delay (d ₂), s/veh		136.2			0.0		2.2	0.4			113.2	
Initial Queue Delay (d ₃), s/veh		0.0			0.0		0.0	0.0			0.0	
Control Delay (d), s/veh		155.4					27.7	16.1			141.9	
Level of Service (LOS)		F					C	B			F	
Approach Delay, s/veh / LOS	155.4	F		0.0			20.5	C		141.9	F	
Intersection Delay, s/veh / LOS	99.8						F					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.2	B		2.1	B		2.1	B		2.1	B	
Bicycle LOS Score / LOS	2.2	B		2.1	B		2.1	B		2.1	B	

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Morning Peak Hour	PHF	0.90	
Intersection	Iowa Avenue-I-215 NB Ramp	Analysis Year	OY (2017) With Project	Analysis Period	1> 7:00	
File Name	AMOYW9I.xus					
Project Description	Center Street Warehouse					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	95		823	0	0	0	297	482			14	241

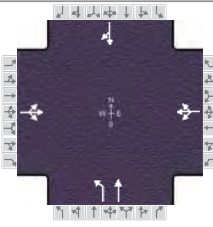
Signal Information											
Cycle, s	87.5	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	40.0	18.1	17.4	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		5.0		8.0	2.0	4.0		8.3
Phase Duration, s		44.0		44.0	22.1	43.5		21.4
Change Period, (Y+R _c), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (MAH), s		3.3		0.0	3.1	3.1		3.1
Queue Clearance Time (g _s), s		40.6			17.5	20.8		16.8
Green Extension Time (g _e), s		0.0		0.0	0.6	1.6		0.6
Phase Call Probability		1.00			1.00	1.00		1.00
Max Out Probability		1.00			0.00	0.01		0.00

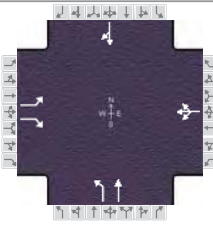
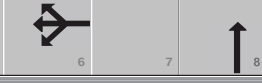
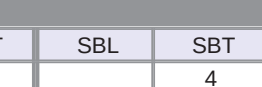
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5		12	1	6	16	3	8			4	14
Adjusted Flow Rate (v), veh/h	106		914		0		330	536			283	
Adjusted Saturation Flow Rate (s), veh/h/ln	1810		1610		0		1810	1900			1624	
Queue Service Time (g _s), s	2.9		38.6		0.0		15.5	18.8			14.8	
Cycle Queue Clearance Time (g _c), s	2.9		38.6		0.0		15.5	18.8			14.8	
Green Ratio (g/C)	0.46		0.66				0.21	0.45			0.20	
Capacity (c), veh/h	910		1069				374	858			323	
Volume-to-Capacity Ratio (X)	0.116		0.855		0.000		0.882	0.625			0.878	
Available Capacity (c _a), veh/h	910		1069				827	858			742	
Back of Queue (Q), veh/ln (50th percentile)	1.1		12.7		0.0		6.8	7.9			5.9	
Queue Storage Ratio (RQ) (50th percentile)	0.00		0.00		0.00		0.00	0.00			0.00	
Uniform Delay (d ₁), s/veh	13.7		11.4				33.7	18.3			34.0	
Incremental Delay (d ₂), s/veh	0.0		6.6		0.0		2.7	1.1			3.0	
Initial Queue Delay (d ₃), s/veh	0.0		0.0		0.0		0.0	0.0			0.0	
Control Delay (d), s/veh	13.7		18.0				36.4	19.4			37.1	
Level of Service (LOS)	B		B				D	B			D	
Approach Delay, s/veh / LOS	17.6		B		0.0		25.9		C		37.1	
Intersection Delay, s/veh / LOS	23.4						C					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.3		B	2.1		B	1.4		A	2.3		B
Bicyclist LOS Score / LOS	2.3		B	2.1		B	1.4		A	2.3		B

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information													
Agency		Kunzman Associates, Inc.				Duration, h		0.25											
Analyst		BC		Analysis Date		1/18/2016		Area Type		Other									
Jurisdiction		Riverside		Time Period		Evening Peak Hour		PHF		0.88									
Intersection		Iowa Avenue-I-215 NB Rar		Analysis Year		OY (2017) With Project		Analysis Period		1> 7:00									
File Name		PMOYW9.xus																	
Project Description		Center Street Warehouse																	
Demand Information				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h				126	0	804	0	0	0	345	640			22	330				
Signal Information																			
Cycle, s	64.1	Reference Phase	2																
Offset, s	0	Reference Point	End	Green	26.2	15.9	10.0	0.0	0.0	0.0									
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0									
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0									
Timer Results				EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase						2				6		3		8				4	
Case Number						8.0				8.0		2.0		4.0				8.3	
Phase Duration, s						30.2				30.2		19.9		33.9				14.0	
Change Period, (Y+R _c), s						4.0				4.0		4.0		4.0				4.0	
Max Allow Headway (MAH), s						3.3				0.0		3.1		3.1				3.1	
Queue Clearance Time (g _s), s						28.2						15.3		23.2				12.0	
Green Extension Time (g _e), s						0.0				0.0		0.6		2.4				0.0	
Phase Call Probability						1.00						1.00		1.00				1.00	
Max Out Probability						1.00						0.01		0.02				1.00	
Movement Group Results				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement				5	2	12	1	6	16	3	8			4	14				
Adjusted Flow Rate (v), veh/h					1057			0		392	727			400					
Adjusted Saturation Flow Rate (s), veh/h/ln					1593			0		1810	1900			1626					
Queue Service Time (g _s), s					22.6			0.0		13.3	21.2			10.0					
Cycle Queue Clearance Time (g _c), s					26.2			0.0		13.3	21.2			10.0					
Green Ratio (g/C)					0.41					0.25	0.47			0.16					
Capacity (c), veh/h					715					449	886			254					
Volume-to-Capacity Ratio (X)					1.479			0.000		0.873	0.820			1.577					
Available Capacity (c _a), veh/h					715					706	1185			254					
Back of Queue (Q), veh/ln (50th percentile)					53.9			0.0		5.7	8.2			23.2					
Queue Storage Ratio (RQ) (50th percentile)					0.00			0.00		0.00	0.00			0.00					
Uniform Delay (d ₁), s/veh					20.1					23.1	14.8			27.1					
Incremental Delay (d ₂), s/veh					222.9			0.0		4.7	2.6			277.9					
Initial Queue Delay (d ₃), s/veh					0.0			0.0		0.0	0.0			0.0					
Control Delay (d), s/veh					243.0					27.8	17.4			305.0					
Level of Service (LOS)					F					C	B			F					
Approach Delay, s/veh / LOS				243.0		F		0.0				21.0		C		305.0		F	
Intersection Delay, s/veh / LOS				156.2						F									
Multimodal Results				EB			WB			NB			SB						
Pedestrian LOS Score / LOS				2.3		B		2.1		B		2.1		B		2.1		B	
Bicycle LOS Score / LOS				2.2		B		2.1		B		2.3		B		2.1		B	

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information													
Agency		Kunzman Associates, Inc.				Duration, h		0.25											
Analyst		BC		Analysis Date		1/18/2016		Area Type		Other									
Jurisdiction		Riverside		Time Period		Evening Peak Hour		PHF		0.88									
Intersection		Iowa Avenue-I-215 NB Rar		Analysis Year		OY (2017) With Project		Analysis Period		1> 7:00									
File Name		PMOYW9I.xus																	
Project Description		Center Street Warehouse - With Improvements																	
Demand Information				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h				126		804	0	0	0	345	640			22	330				
Signal Information																			
Cycle, s	94.6	Reference Phase	2	Green	18.2	25.5	39.0	0.0	0.0	0.0	0.0	1	2	3	4				
Offset, s	0	Reference Point	End	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	0.0	5	6	7	8				
Uncoordinated	Yes	Simult. Gap E/W	On	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
Force Mode	Fixed	Simult. Gap N/S	On																
Timer Results				EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase						2				6				8				4	
Case Number						5.0				8.0				10.0				12.0	
Phase Duration, s						22.2				22.2				43.0				29.5	
Change Period, (Y+R _c), s						4.0				4.0				4.0				4.0	
Max Allow Headway (MAH), s						3.3				0.0				3.1				3.3	
Queue Clearance Time (g _s), s						20.2								36.5				24.6	
Green Extension Time (g _e), s						0.0				0.0				2.4				0.8	
Phase Call Probability						1.00								1.00				1.00	
Max Out Probability						1.00								0.00				0.00	
Movement Group Results				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement				5		12	1	6	16	3	8			4	14				
Adjusted Flow Rate (v), veh/h				143		914		0		392	727			400					
Adjusted Saturation Flow Rate (s), veh/h/ln				1810		1610		0		1810	1900			1626					
Queue Service Time (g _s), s				6.6		18.2		0.0		15.4	34.5			22.6					
Cycle Queue Clearance Time (g _c), s				6.6		18.2		0.0		15.4	34.5			22.6					
Green Ratio (g/C)				0.19		0.60				0.41	0.41			0.27					
Capacity (c), veh/h				424		973				746	783			438					
Volume-to-Capacity Ratio (X)				0.338		0.939		0.000		0.526	0.929			0.914					
Available Capacity (c _a), veh/h				424		973				1337	1404			687					
Back of Queue (Q), veh/ln (50th percentile)				2.8		19.7		0.0		6.2	15.2			9.6					
Queue Storage Ratio (RQ) (50th percentile)				0.00		0.00		0.00		0.00	0.00			0.00					
Uniform Delay (d ₁), s/veh				33.6		17.2				20.9	26.5			33.6					
Incremental Delay (d ₂), s/veh				0.2		16.0		0.0		0.2	3.1			8.4					
Initial Queue Delay (d ₃), s/veh				0.0		0.0		0.0		0.0	0.0			0.0					
Control Delay (d), s/veh				33.7		33.2				21.1	29.6			41.9					
Level of Service (LOS)				C		C				C	C			D					
Approach Delay, s/veh / LOS				33.2		C	0.0			26.7		C	41.9		D				
Intersection Delay, s/veh / LOS				31.7						C									
Multimodal Results				EB			WB			NB			SB						
Pedestrian LOS Score / LOS				2.3		B	2.1		B	1.4		A	2.3		B				
Bicycle LOS Score / LOS				2.3		B	2.1		B	1.4		A	2.3		B				

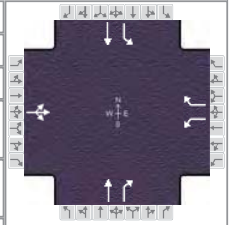
Planning Commission - Exhibit 1 - Development Review Committee Staff Report

Development Review Committee - Exhibit 7 - CEQA Documents

Attachment 3 - City Planning Commission Report and Exhibits - April 05, 2018

HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information	
Agency	Kunzman Associates, Inc.				Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other	
Jurisdiction	Riverside	Time Period	Morning Peak Hour	PHF	0.82	
Intersection	Iowa Avenue/Main Street	Analysis Year	OY (2017) With Project	Analysis Period	1> 7:00	
File Name	AMOYW10.xus					
Project Description	Center Street Warehouse					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	0	0	0	107		279		472	104	225	635	

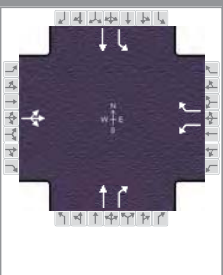
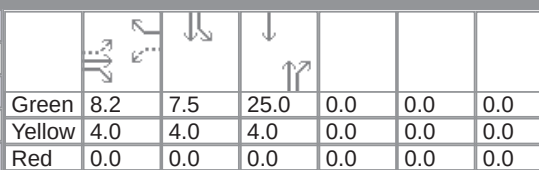
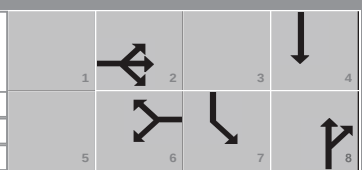
Signal Information											
Cycle, s	53.9	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	13.8	10.0	18.1	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
				Red	0.0	0.0	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		5.0		7.3	2.0	4.0
Phase Duration, s		17.8		17.8		22.1	14.0	36.1
Change Period, (Y+R _c), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (MAH), s		0.0		3.3		3.1	3.1	3.1
Queue Clearance Time (g _s), s				12.8		17.6	9.9	17.0
Green Extension Time (g _e), s		0.0		1.0		0.5	0.3	1.3
Phase Call Probability				1.00		1.00	0.98	1.00
Max Out Probability				0.00		1.00	0.18	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1		16		8	18	7	4	
Adjusted Flow Rate (v), veh/h		0		130		340		576	127	274	774	
Adjusted Saturation Flow Rate (s), veh/h/ln		0		1810		1610		1900	1610	1810	1900	
Queue Service Time (g _s), s		0.0		3.1		10.8		15.6	3.1	7.9	15.0	
Cycle Queue Clearance Time (g _c), s		0.0		3.1		10.8		15.6	3.1	7.9	15.0	
Green Ratio (g/C)				0.26		0.26		0.34	0.34	0.19	0.60	
Capacity (c), veh/h				597		413		639	542	335	1132	
Volume-to-Capacity Ratio (X)		0.000		0.219		0.824		0.901	0.234	0.818	0.684	
Available Capacity (c _a), veh/h				1472		1192		703	596	502	1132	
Back of Queue (Q), veh/ln (50th percentile)		0.0		1.1		3.7		8.0	1.0	3.3	4.3	
Queue Storage Ratio (RQ) (50th percentile)		0.00		0.00		0.00		0.00	0.00	0.00	0.00	
Uniform Delay (d ₁), s/veh				16.1		19.0		17.1	12.9	21.1	7.5	
Incremental Delay (d ₂), s/veh		0.0		0.1		1.6		13.2	0.1	3.8	1.4	
Initial Queue Delay (d ₃), s/veh		0.0		0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (d), s/veh				16.2		20.6		30.2	13.0	25.0	8.9	
Level of Service (LOS)				B		C		C	B	C	A	
Approach Delay, s/veh / LOS	0.0			19.3		B	27.1		C	13.1		B
Intersection Delay, s/veh / LOS	18.9						B					

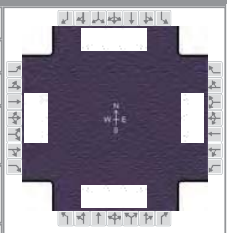
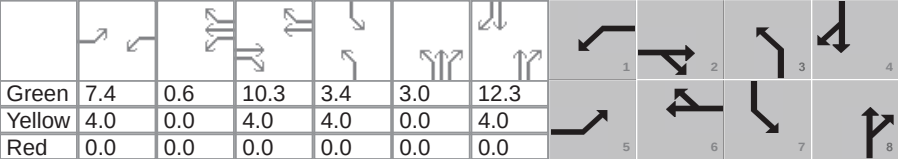
Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.3		B	2.3		B	2.3		B	1.3		A
Bicyclist LOS Score / LOS	0.5		A	0.5		A	1.6		A	2.7		B

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information										
Agency	Kunzman Associates, Inc.					Duration, h	0.25									
Analyst	BC		Analysis Date	1/18/2016		Area Type	Other									
Jurisdiction	Riverside		Time Period	Evening Peak Hour		PHF	0.95									
Intersection	Iowa Avenue/Main Street		Analysis Year	OY (2017) With Project		Analysis Period	1> 7:00									
File Name	PMOYW10.xus															
Project Description	Center Street Warehouse															
Demand Information				EB			WB			NB			SB			
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R	
Demand (v), veh/h				0	0	0	117		171		836	127	118	712		
Signal Information																
Cycle, s	52.8	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	Yes	Simult. Gap E/W	On			Green	8.2	7.5	25.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On			Yellow	4.0	4.0	4.0	0.0	0.0	0.0				
				Red	0.0	0.0	0.0	0.0	0.0	0.0						
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT					
Assigned Phase					2		6		8	7	4					
Case Number					8.0		5.0		7.3	2.0	4.0					
Phase Duration, s					12.2		12.2		29.0	11.5	40.5					
Change Period, (Y+R _c), s					4.0		4.0		4.0	4.0	4.0					
Max Allow Headway (MAH), s					0.0		3.2		3.0	3.1	3.0					
Queue Clearance Time (g _s), s							7.6		25.9	5.3	12.6					
Green Extension Time (g _e), s					0.0		0.6		0.0	0.1	2.9					
Phase Call Probability							1.00		1.00	0.84	1.00					
Max Out Probability							0.00		1.00	0.00	0.50					
Movement Group Results				EB			WB			NB			SB			
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement				5	2	12	1		16		8	18	7	4		
Adjusted Flow Rate (v), veh/h					0		123		180		880	134	124	749		
Adjusted Saturation Flow Rate (s), veh/h/ln					0		1810		1610		1900	1610	1810	1900		
Queue Service Time (g _s), s					0.0		3.3		5.6		23.9	2.5	3.3	10.6		
Cycle Queue Clearance Time (g _c), s					0.0		3.3		5.6		23.9	2.5	3.3	10.6		
Green Ratio (g/C)							0.16		0.16		0.47	0.47	0.14	0.69		
Capacity (c), veh/h							418		251		900	763	259	1316		
Volume-to-Capacity Ratio (X)					0.000		0.295		0.718		0.977	0.175	0.480	0.569		
Available Capacity (c _a), veh/h							1508		1221		900	763	515	1316		
Back of Queue (Q), veh/ln (50th percentile)					0.0		1.2		2.0		13.7	0.7	1.3	1.9		
Queue Storage Ratio (RQ) (50th percentile)					0.00		0.00		0.00		0.00	0.00	0.00	0.00		
Uniform Delay (d ₁), s/veh							20.2		21.2		13.6	8.0	20.8	4.1		
Incremental Delay (d ₂), s/veh					0.0		0.1		1.5		24.4	0.0	0.5	0.4		
Initial Queue Delay (d ₃), s/veh					0.0		0.0		0.0		0.0	0.0	0.0	0.0		
Control Delay (d), s/veh							20.3		22.6		38.0	8.0	21.3	4.5		
Level of Service (LOS)							C		C		D	A	C	A		
Approach Delay, s/veh / LOS				0.0			21.7		C	34.0		C	6.9		A	
Intersection Delay, s/veh / LOS				21.5						C						
Multimodal Results				EB			WB			NB			SB			
Pedestrian LOS Score / LOS				2.3	B	2.3	B	2.2	B	1.3	A					
Bicycle LOS Score / LOS				0.5	A	0.5	A	0.5	A	0.5	A					

Planning Commission - Exhibit 1- Development Review Committee Staff Report

HCS 2010 Signalized Intersection Results Summary

General Information						Intersection Information										
Agency	Kunzman Associates, Inc.					Duration, h	0.25									
Analyst	BC	Analysis Date	1/18/2016			Area Type	Other									
Jurisdiction	Riverside	Time Period	Morning Peak Hour			PHF	0.90									
Intersection	Iowa Avenue/Center Street	Analysis Year	OY (2017) With Project			Analysis Period	1> 7:00									
File Name	AMOYW11.xus															
Project Description	Center Street Warehouse															
Demand Information				EB			WB			NB			SB			
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R	
Demand (v), veh/h				104	193	84	131	278	57	77	353	82	29	596	85	
Signal Information																
Cycle, s	53.1	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	Yes	Simult. Gap E/W	On													
Force Mode	Fixed	Simult. Gap N/S	On	Green	7.4	0.6	10.3	3.4	3.0	12.3	Yellow	4.0	0.0	4.0	4.0	4.0
				Red	0.0	0.0	0.0	0.0	0.0	0.0						
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT					
Assigned Phase				5	2	1	6	3	8	7	4					
Case Number				2.0	4.0	2.0	3.0	2.0	3.0	2.0	3.0					
Phase Duration, s				11.4	14.3	12.0	14.9	10.5	19.4	7.4	16.3					
Change Period, (Y+R _c), s				4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Allow Headway (MAH), s				3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1					
Queue Clearance Time (g _s), s				5.1	6.1	5.9	10.2	4.3	6.6	2.9	11.1					
Green Extension Time (g _e), s				0.1	1.0	0.2	0.7	0.1	2.3	0.0	1.2					
Phase Call Probability				0.82	1.00	0.88	1.00	0.72	1.00	0.38	1.00					
Max Out Probability				0.00	0.06	0.00	0.43	0.00	0.19	0.00	0.78					
Movement Group Results				EB			WB			NB			SB			
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement				5	2	12	1	6	16	3	8	18	7	4	14	
Adjusted Flow Rate (v), veh/h				116	158	149	146	309	63	86	392	91	32	662	94	
Adjusted Saturation Flow Rate (s), veh/h/ln				1810	1900	1708	1810	1900	1610	1810	1809	1610	1810	1809	1610	
Queue Service Time (g _s), s				3.1	3.9	4.1	3.9	8.2	1.7	2.3	4.6	2.3	0.9	9.1	2.5	
Cycle Queue Clearance Time (g _c), s				3.1	3.9	4.1	3.9	8.2	1.7	2.3	4.6	2.3	0.9	9.1	2.5	
Green Ratio (g/C)				0.14	0.19	0.19	0.15	0.21	0.21	0.12	0.29	0.29	0.06	0.23	0.23	
Capacity (c), veh/h				251	371	333	271	391	332	220	1048	466	116	840	374	
Volume-to-Capacity Ratio (X)				0.460	0.427	0.449	0.537	0.789	0.191	0.389	0.374	0.195	0.277	0.788	0.253	
Available Capacity (c _a), veh/h				511	537	482	511	537	455	511	1048	466	511	1022	455	
Back of Queue (Q), veh/ln (50th percentile)				1.2	1.5	1.5	1.5	3.6	0.6	0.9	1.6	0.7	0.4	3.6	0.8	
Queue Storage Ratio (RQ) (50th percentile)				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Uniform Delay (d ₁), s/veh				21.0	18.8	18.9	20.9	20.0	17.4	21.5	15.0	14.2	23.7	19.2	16.6	
Incremental Delay (d ₂), s/veh				0.5	0.3	0.4	0.6	3.6	0.1	0.4	0.1	0.1	0.5	2.7	0.1	
Initial Queue Delay (d ₃), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (d), s/veh				21.5	19.1	19.2	21.5	23.6	17.5	21.9	15.1	14.3	24.1	21.9	16.8	
Level of Service (LOS)				C	B	B	C	C	B	C	B	B	C	C	B	
Approach Delay, s/veh / LOS				19.8	B		22.3	C		16.0	B		21.4	C		
Intersection Delay, s/veh / LOS				20.0						B						
Multimodal Results				EB			WB			NB			SB			
Pedestrian LOS Score / LOS				2.9	C		2.9	C		2.8	C		2.4	B		
Bicyclist LOS Score / LOS				0.8	A		1.3	A		1.0	A		1.1	A		

HCS 2010 Signalized Intersection Results Summary															
General Information								Intersection Information							
Agency		Kunzman Associates, Inc.						Duration, h		0.25					
Analyst		BC		Analysis Date		1/18/2016		Area Type		Other					
Jurisdiction		Riverside		Time Period		Evening Peak Hour		PHF		0.97					
Intersection		Iowa Avenue/Center Street		Analysis Year		OY (2017) With Project		Analysis Period		1> 7:00					
File Name		PMOYW11.xus													
Project Description		Center Street Warehouse													
Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				233	260	89	125	115	25	89	656	70	44	671	56
Signal Information															
Cycle, s	54.2	Reference Phase	2												
Offset, s	0	Reference Point	End												
Uncoordinated	Yes	Simult. Gap E/W	On												
Force Mode	Fixed	Simult. Gap N/S	On												
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase				5	2	1	6	3	8	7	4				
Case Number				2.0	4.0	2.0	3.0	2.0	3.0	2.0	3.0				
Phase Duration, s				13.0	14.2	10.9	12.0	10.0	21.2	8.0	19.2				
Change Period, (Y+Rc), s				4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Allow Headway (MAH), s				3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1				
Queue Clearance Time (gs), s				8.9	6.9	5.6	5.1	4.6	10.5	3.3	11.2				
Green Extension Time (ge), s				0.3	0.8	0.2	0.9	0.2	3.0	0.0	3.9				
Phase Call Probability				0.97	1.00	0.86	1.00	0.75	1.00	0.50	1.00				
Max Out Probability				0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00				
Movement Group Results				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h				240	185	175	129	119	26	92	676	72	45	692	58
Adjusted Saturation Flow Rate (s), veh/h/ln				1810	1900	1736	1810	1900	1610	1810	1809	1610	1810	1809	1610
Queue Service Time (gs), s				6.9	4.8	4.9	3.6	3.1	0.8	2.6	8.5	1.7	1.3	9.2	1.5
Cycle Queue Clearance Time (gc), s				6.9	4.8	4.9	3.6	3.1	0.8	2.6	8.5	1.7	1.3	9.2	1.5
Green Ratio (g/C)				0.17	0.19	0.19	0.13	0.15	0.15	0.11	0.32	0.32	0.07	0.28	0.28
Capacity (c), veh/h				302	357	326	229	280	237	201	1148	511	133	1013	451
Volume-to-Capacity Ratio (X)				0.795	0.518	0.537	0.562	0.423	0.109	0.457	0.589	0.141	0.341	0.683	0.128
Available Capacity (ca), veh/h				666	700	639	666	1399	1186	1333	1332	593	666	2664	1186
Back of Queue (Q), veh/ln (50th percentile)				2.8	1.9	1.8	1.4	1.3	0.3	1.0	3.0	0.5	0.5	3.3	0.5
Queue Storage Ratio (RQ) (50th percentile)				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh				21.7	19.8	19.9	22.3	21.1	20.1	22.6	15.6	13.2	23.9	17.4	14.6
Incremental Delay (d2), s/veh				1.8	0.4	0.5	0.8	0.4	0.1	0.6	0.2	0.0	0.6	0.3	0.0
Initial Queue Delay (d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh				23.5	20.3	20.4	23.1	21.4	20.1	23.2	15.8	13.3	24.5	17.7	14.6
Level of Service (LOS)				C	C	C	C	C	C	C	B	B	C	B	B
Approach Delay, s/veh / LOS				21.6	C		22.1	C		16.4	B		17.9	B	
Intersection Delay, s/veh / LOS				18.7						B					
Multimodal Results				EB			WB			NB			SB		
Pedestrian LOS Score / LOS				2.9	C		2.9	C		2.8	C		2.4	B	
Bicyclist LOS Score / LOS				4.0	A		4.0	A		4.2	A		4.1	A	
Planning Commission - Exhibit 10 - Development Review Committee Staff Report															

APPENDIX E

Traffic Signal Warrant Worksheets

PEAK HOUR VOLUME WARRANT (Rural Areas)

Existing

Major Street Name = **Main Street/Riverside Avenue** Total of Both Approaches (VPH) = **1786**

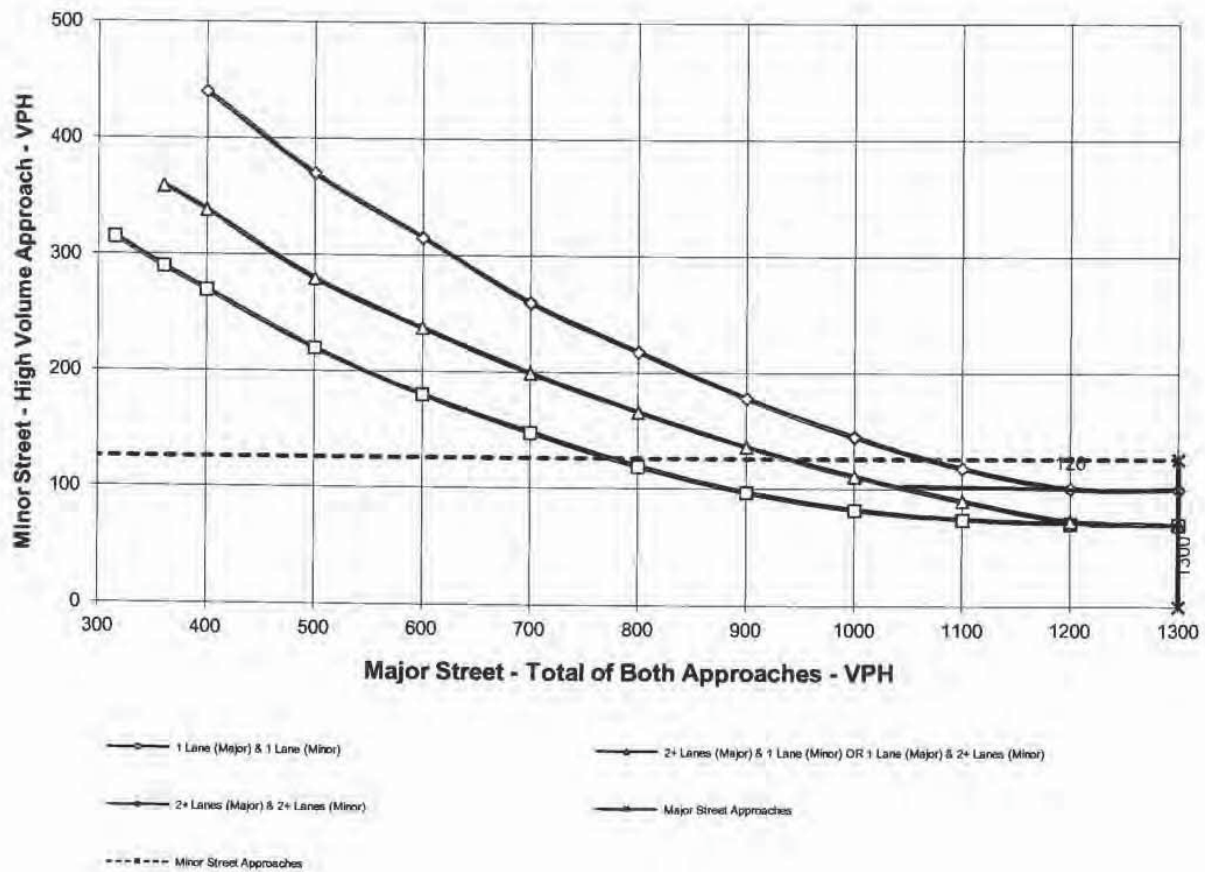
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Center Street**

High Volume Approach (VPH) = **126**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



**** NOTE:**

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

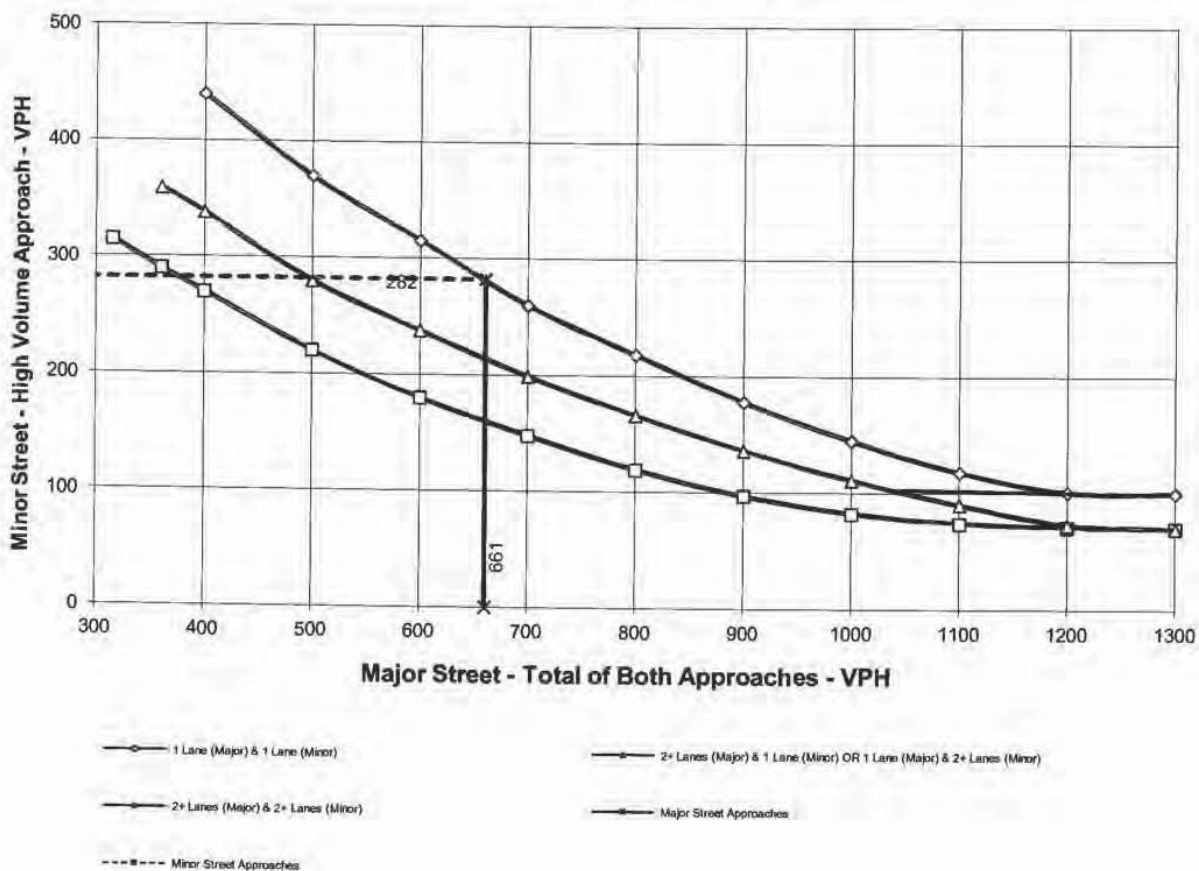
PEAK HOUR VOLUME WARRANT (Rural Areas)

Existing

Major Street Name = **West La Cadena Drive** Total of Both Approaches (VPH) = **661**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Stephens Avenue/I-215 Freeway SB Ramps** Total of Both Approaches (VPH) = **282**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



** NOTE:

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT (Rural Areas)

Existing

Major Street Name = **Center Street**

Total of Both Approaches (VPH) = **515**

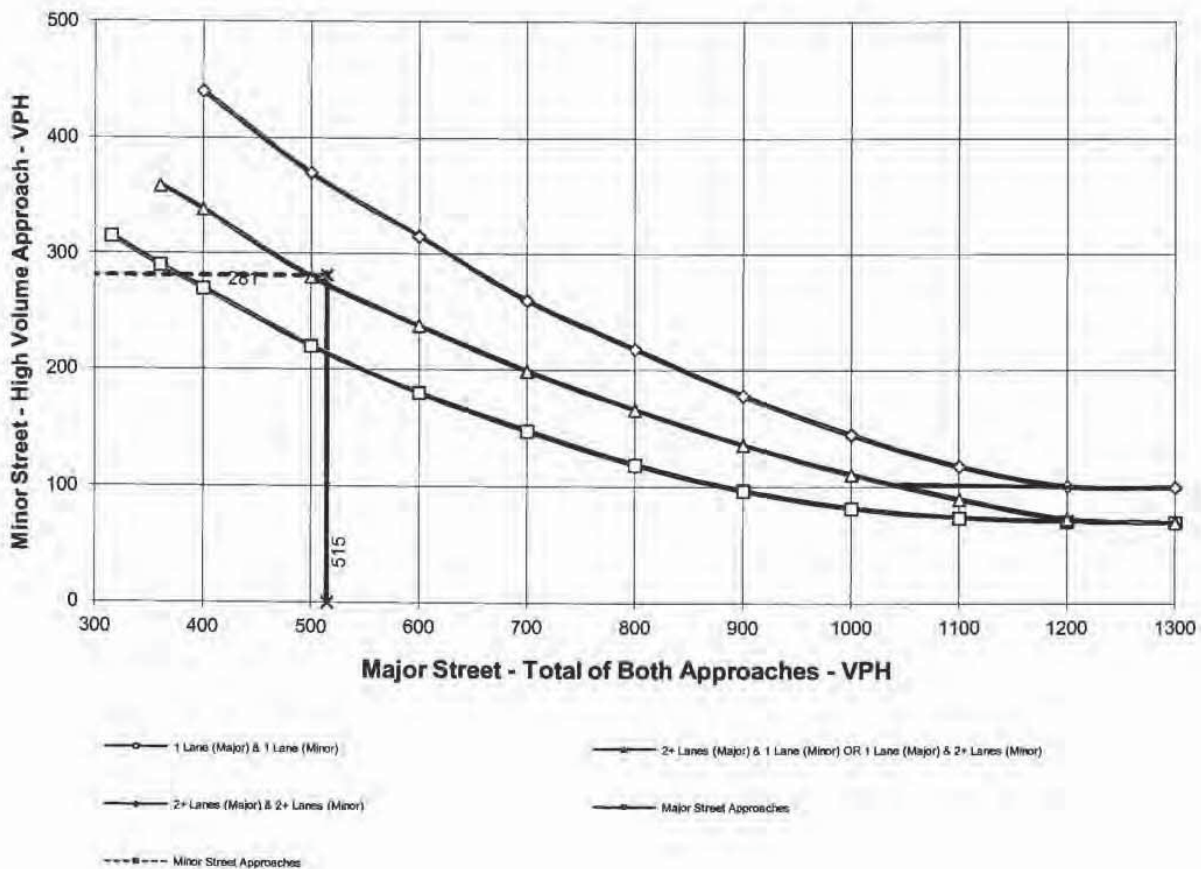
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Highgrove Place**

High Volume Approach (VPH) = **281**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



**** NOTE:**

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.



KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

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Orange, California 92868
(714) 973-8383

www.traffic-engineer.com

Planning Commission - Exhibit 1 - Development Review Committee Staff Report
Development Review Committee - Exhibit 7 - CEQA Documents

Attachment 3 - City Planning Commission Report and Exhibits - April 05, 2018