APPENDIX A

Glossary of Transportation Terms

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

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	Developer
Name:	Kunzman Associates, Inc.	MIG I HOGLE-IRELAND
Address:	1111 W Town & Country Road, Ste. 34	1500 Iowa Avenue, Suite 110
	Orange, CA 92868	Riverside, CA 92507
Telephone:	(714) 973-8383	(9051) 787-9222

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

Existing Land Use	Vacant	Proposed Land Use	Manufacturing
Existing Zoning	BMP	Proposed Zoning	BMP
Total Daily Trips	1,576		

	In	Out	Total
AM Trips	236	65	301
PM Trips	109	194	303

Internal Trip Allowance ☐ Yes ☑ No (% Trip Discount)
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. Main Street/Riverside Avenue at Center Street
2. Project West Access at Center Street
3. Project East Access at Center Street
4. Orange Street at Center Street
5. Stephens Avenue at Center Street
6. West La Cadena Drive at Stevens Avenue
7. East La Cadena Drive at Stevens Avenue
8. Highgrove Place at Center Street
9. Iowa Avenue at I-215 NB On-Ramp
10. Iowa Avenue at Main Street
11. Iowa Avenue at Center Street

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

1.
2.
3.
4.
5.
6.
7.
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 — 12/7/15

Consultant's Representative — Date

12/7/15

Scoping Agreement Submitted on — 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

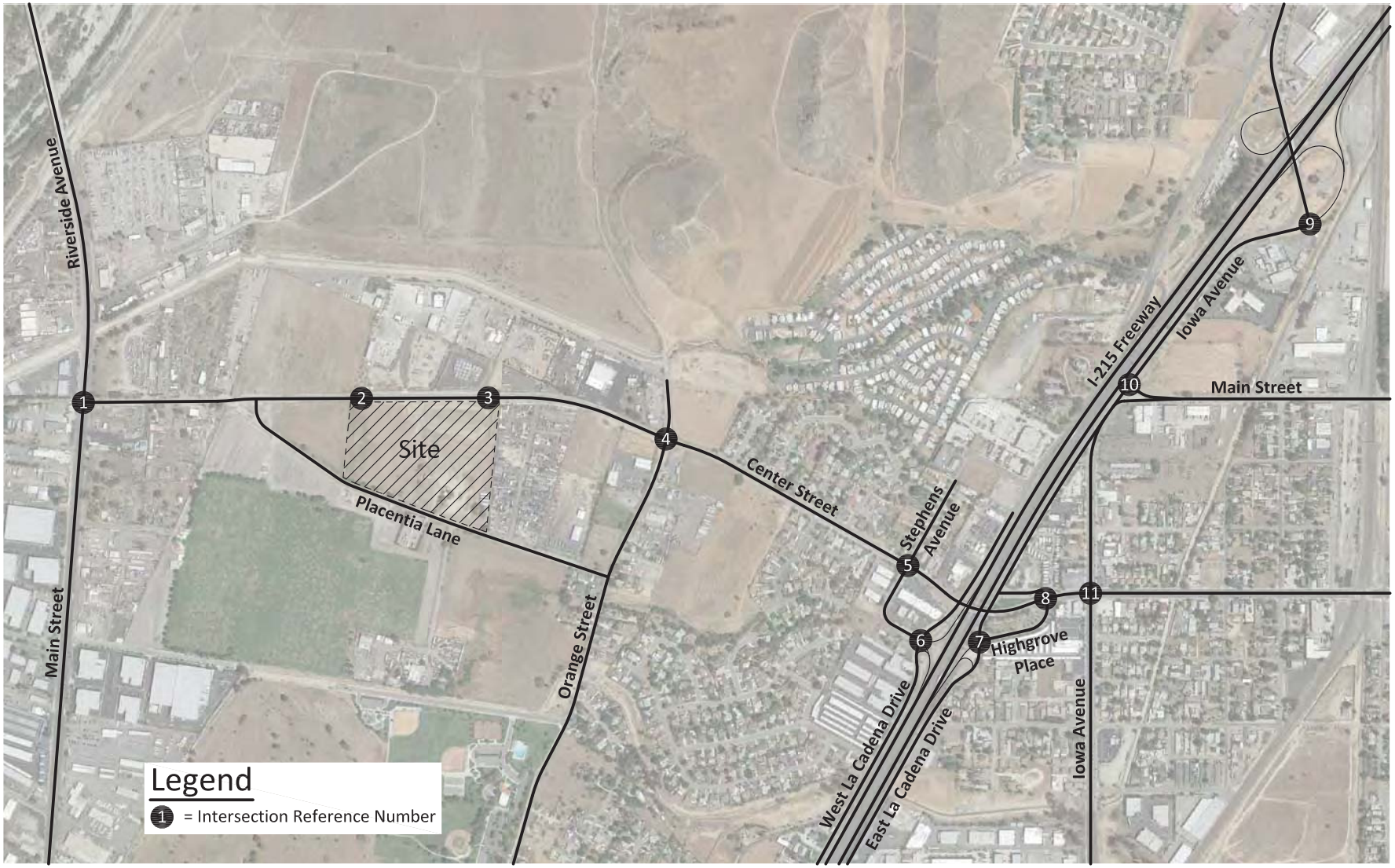
Descriptor		Quantity	Units[2]	Type of Vehicle: Passenger Car	2 Axle Truck	3 Axle Truck	4+ Axle Truck	Total Trucks	Total
Land Use: Manufacturing		308.000	TSF	74.4%	8.4%	4.6%	12.6%	25.6%	100%
Traffic Generation Rates in trips per TSF									
Daily				2.842	0.321	0.176	0.481	0.978	3.82
Morning Peak Hour				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.

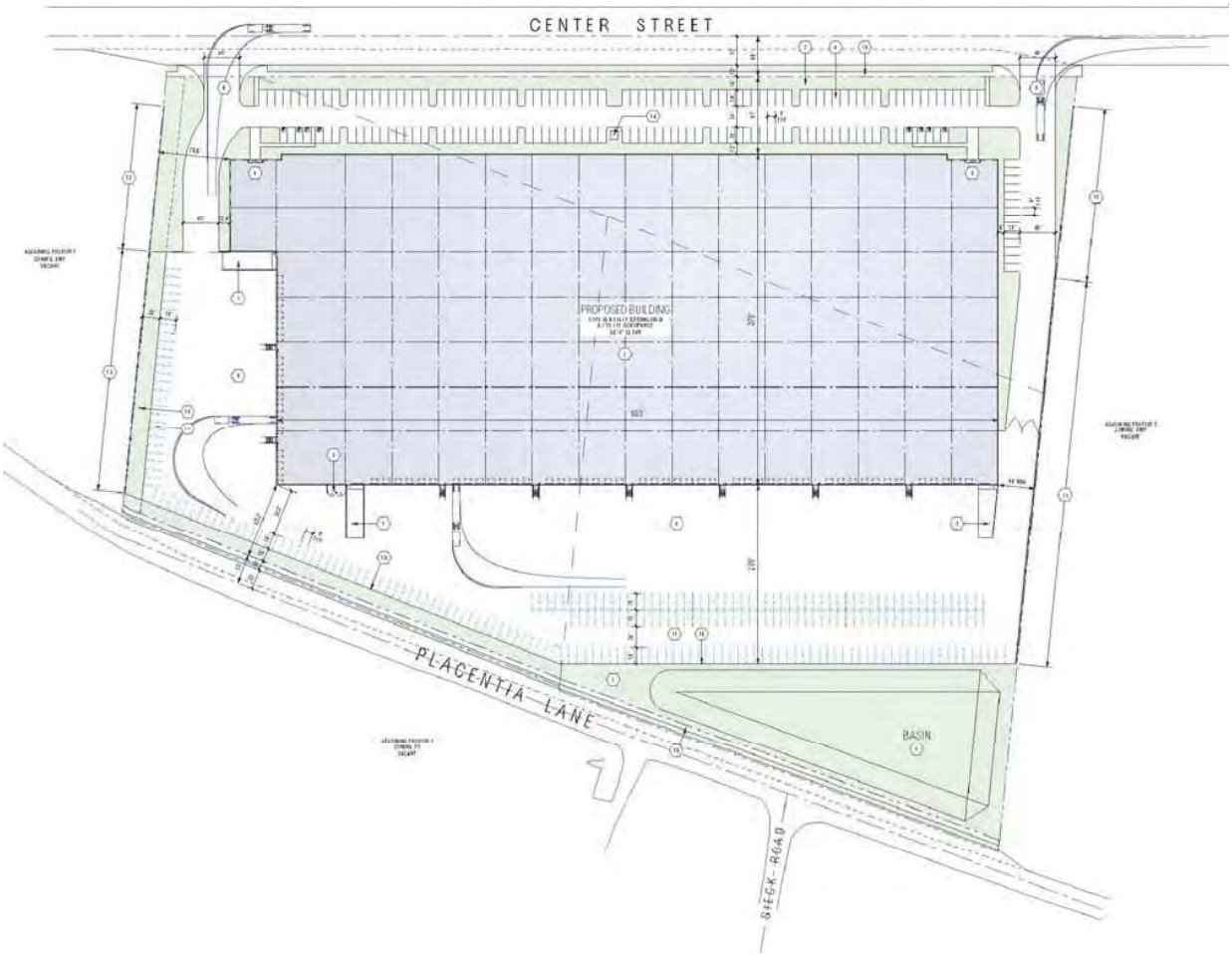
Figure 1
Project Location Map



KUNZMAN ASSOCIATES, INC.
OVER 35 YEARS OF EXCELLENT SERVICE

6055a/1

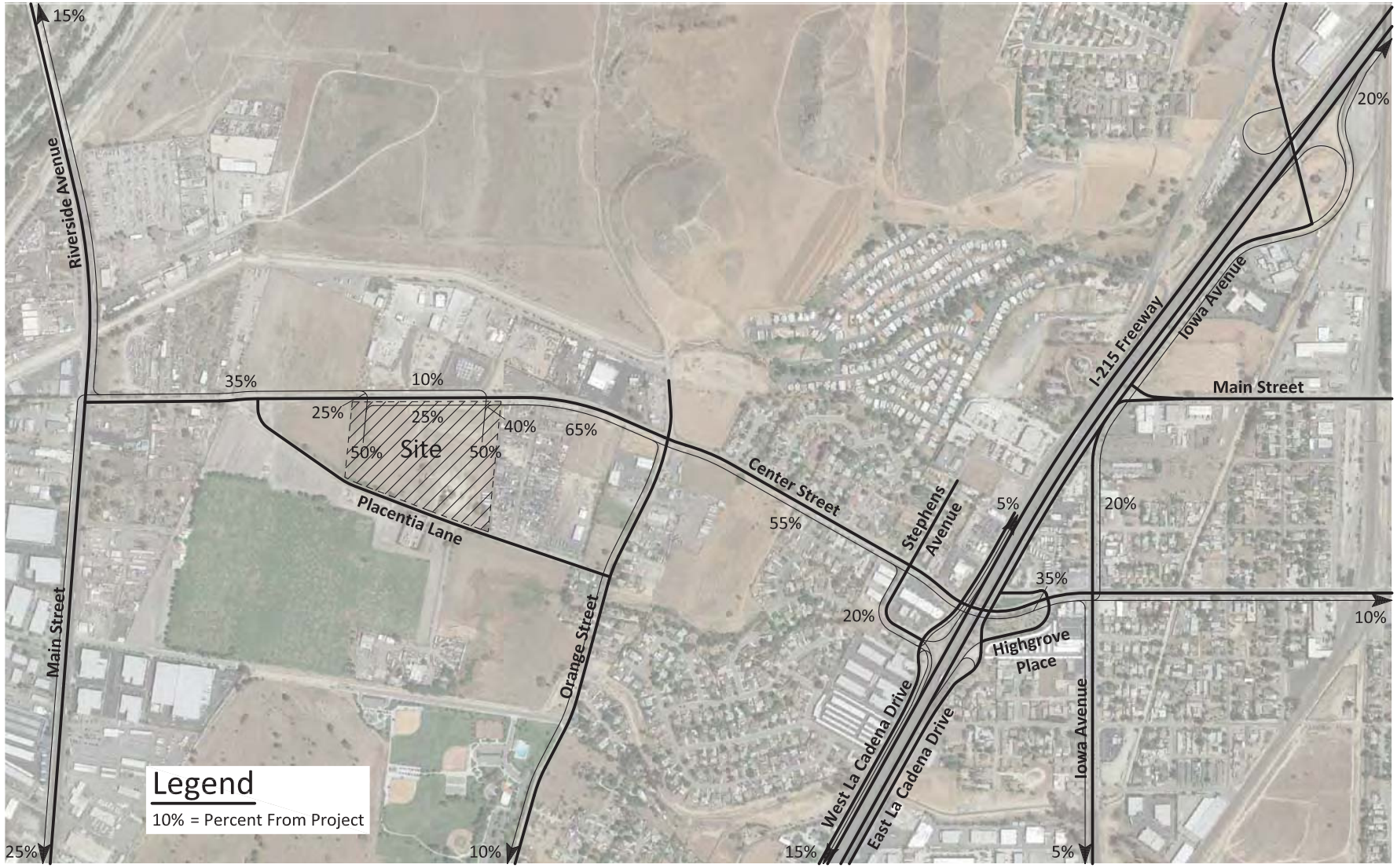
Figure 2
Site Plan



6055a/2

KUNZMAN ASSOCIATES, INC.
OVER 35 YEARS OF EXCELLENT SERVICE

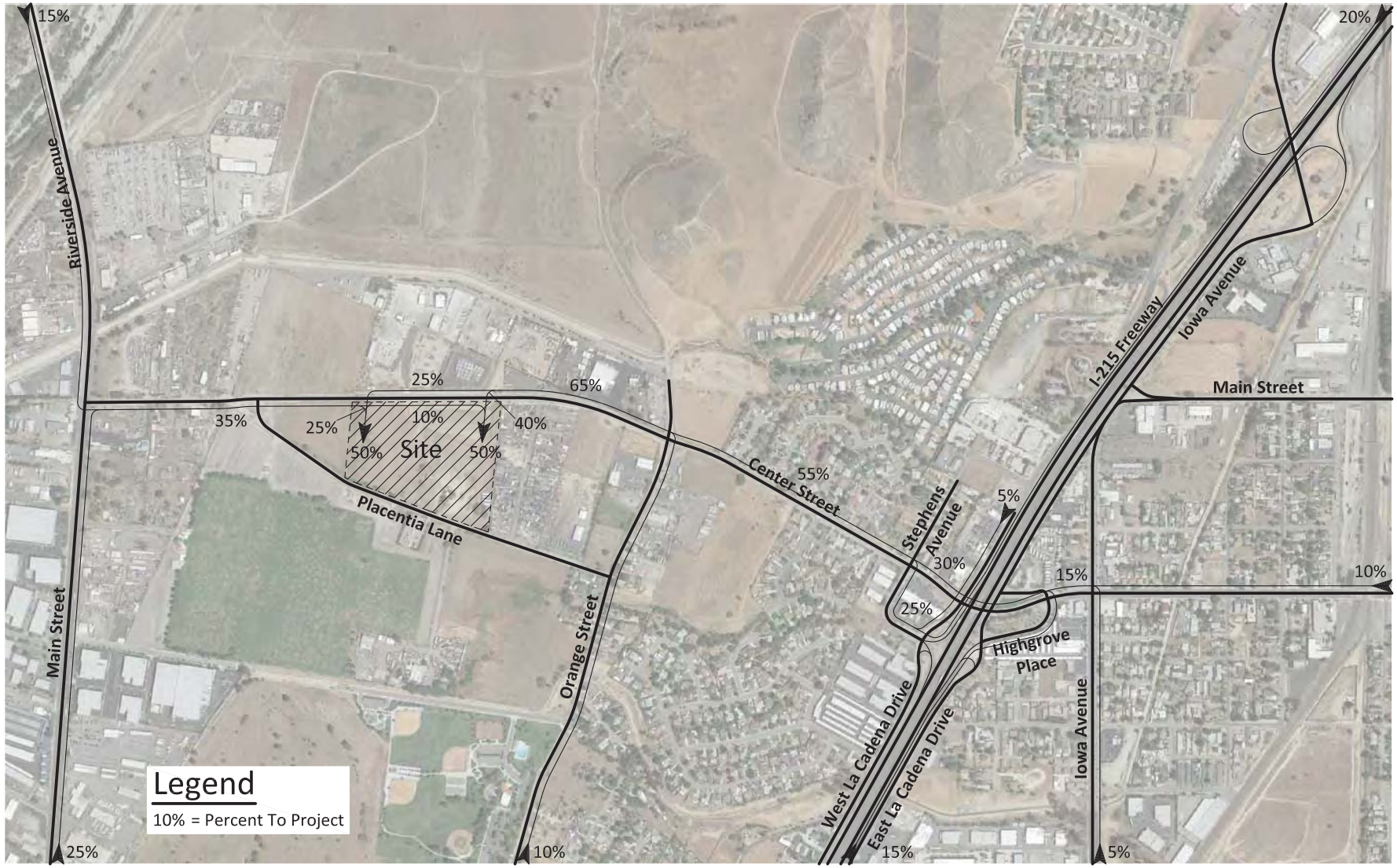
Figure 3
Project Outbound Trip Distribution - Cars



KUNZMAN ASSOCIATES, INC.
OVER 35 YEARS OF EXCELLENT SERVICE

6055a/3

Figure 4
Project Inbound Trip Distribution - Cars



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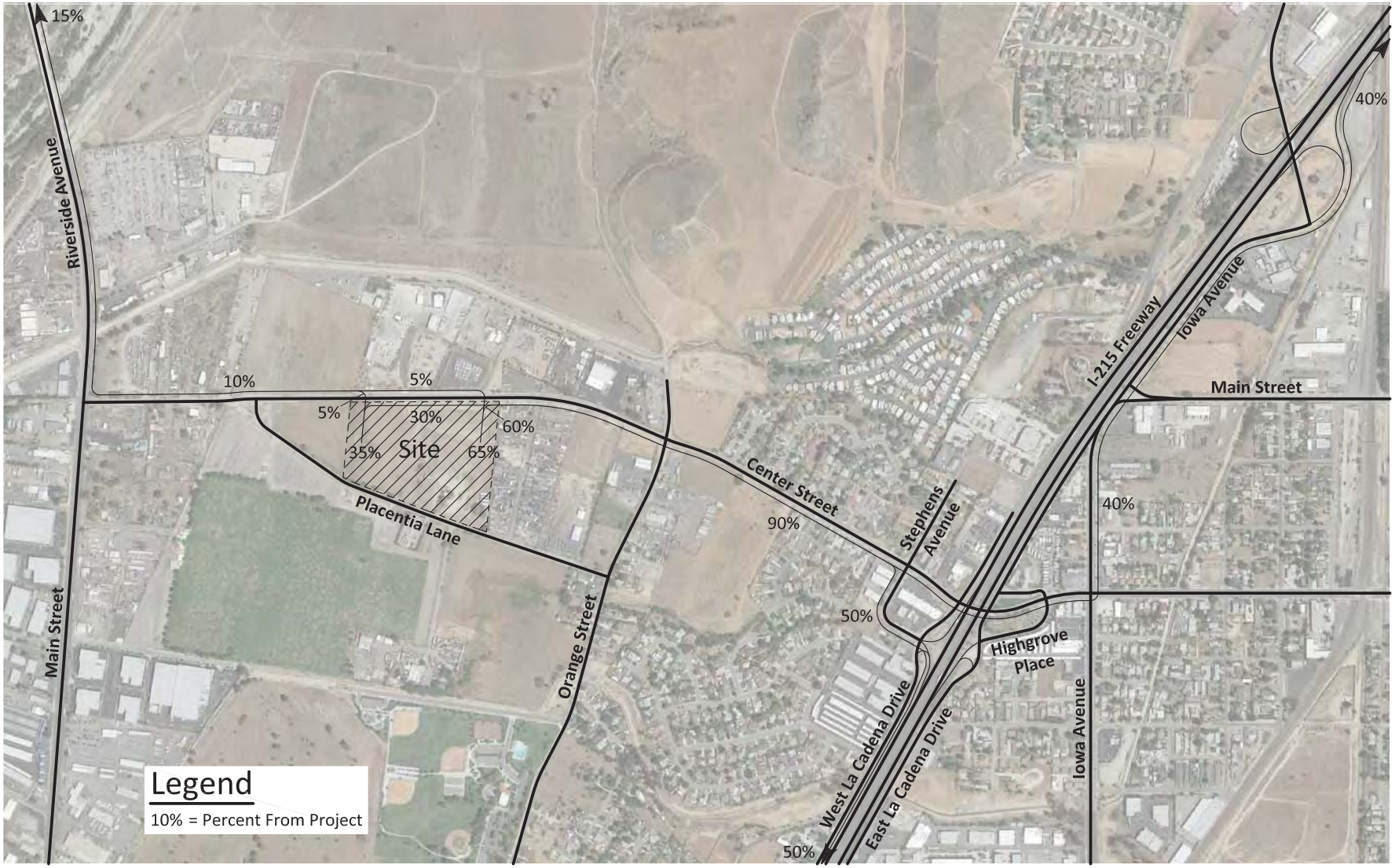
KUNZMAN ASSOCIATES, INC.
OVER 35 YEARS OF EXCELLENT SERVICE

Figure 5
Project Outbound Trip Distribution - Trucks



KUNZMAN ASSOCIATES, INC.
OVER 35 YEARS OF EXCELLENT SERVICE

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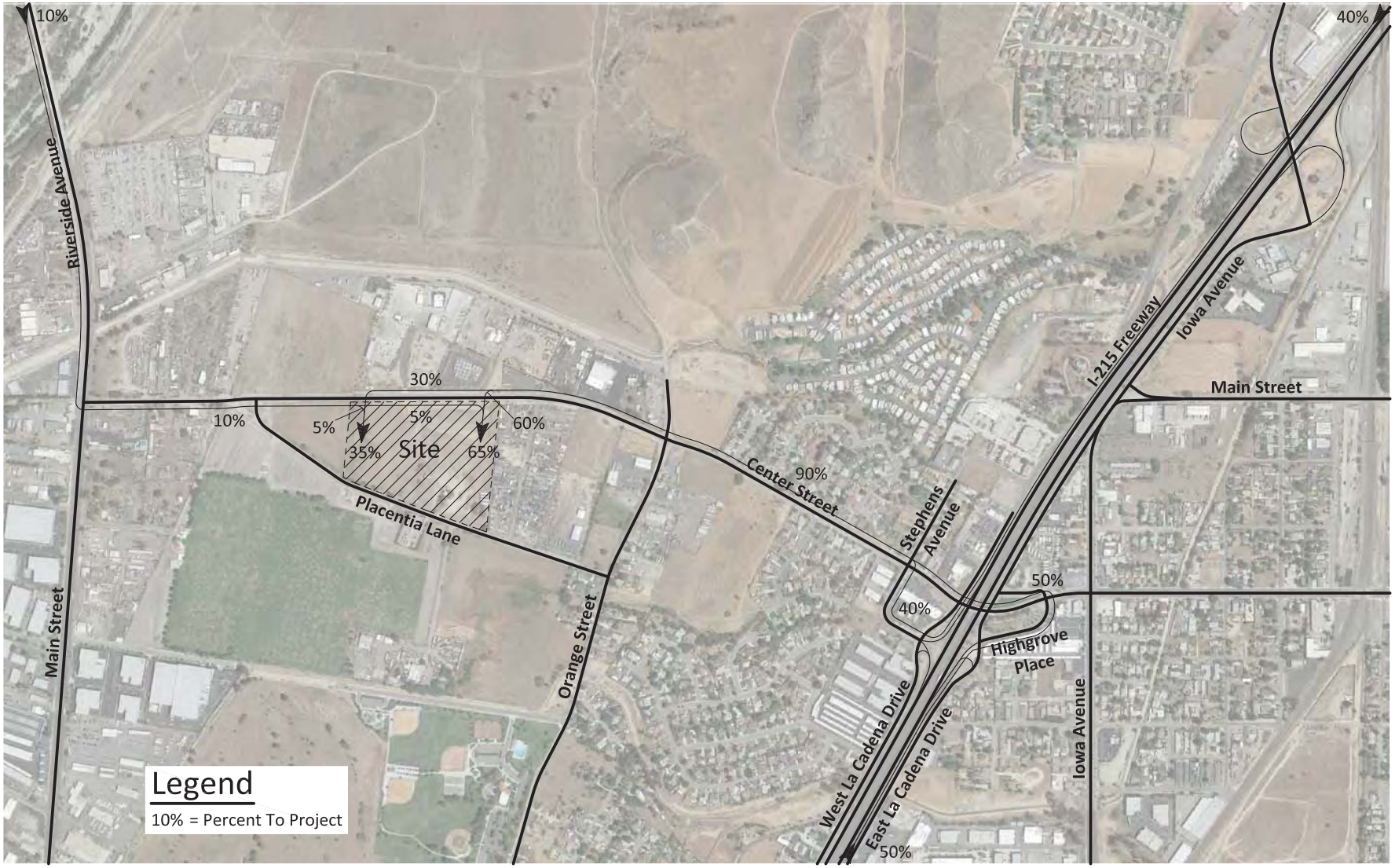
Figure 6
Project Inbound Trip Distribution - Trucks



KUNZMAN ASSOCIATES, INC.
OVER 35 YEARS OF EXCELLENT SERVICE

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APPENDIX C

Traffic Count Worksheets

INTERSECTION TURNING MOVEMENT COUNTS

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

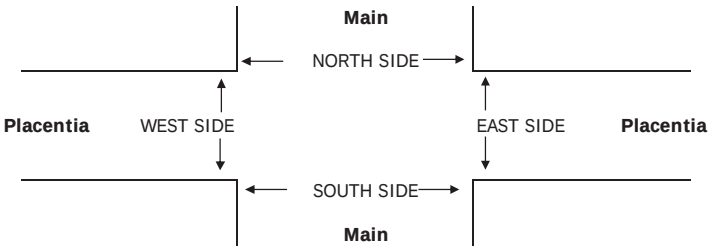
DATE:	LOCATION:	Riverside	PROJECT #:	SC0789
Thu, Dec 10, 15	NORTH & SOUTH:	Main	LOCATION #:	1
	EAST & WEST:	Placentia	CONTROL:	STOP W

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND Main			SOUTHBOUND Main			EASTBOUND Placentia			WESTBOUND Placentia				U-TURNS				
	LANES:	NL 0	NT 2	NR 0	SL 0	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	1	170	6	19	142	1	0	0	0	8	1	22	370	0	0	0	0	0
	7:15 AM	0	164	7	17	159	0	0	0	0	2	0	33	382	0	0	0	0	0
	7:30 AM	0	141	8	21	170	0	0	0	0	9	0	25	374	0	0	0	0	0
	7:45 AM	1	158	14	19	174	0	0	0	0	14	0	23	403	0	0	0	0	0
	8:00 AM	1	127	20	16	131	3	0	0	0	12	0	15	325	0	0	0	0	0
	8:15 AM	0	128	14	20	130	0	0	0	0	14	0	18	324	0	0	0	0	0
	8:30 AM	2	132	14	22	130	1	0	0	0	8	0	33	342	0	0	0	0	0
	8:45 AM	1	119	7	22	132	0	0	0	3	15	0	34	333	0	0	0	0	0
	VOLUMES	6	1,139	90	156	1,168	5	0	0	3	82	1	203	2,853	0	0	0	0	0
	APPROACH %	0%	92%	7%	12%	88%	0%	0%	0%	100%	29%	0%	71%						
	APP/DEPART	1,235	/	1,342	1,329	/	1,253	3	/	246	286	/	12	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	2	633	35	76	645	1	0	0	0	33	1	103	1,529					
	APPROACH %	0%	94%	5%	11%	89%	0%	0%	0%	0%	24%	1%	75%						
	PEAK HR FACTOR		0.946			0.935			0.000			0.926		0.949					
	APP/DEPART	670	/	736	722	/	678	0	/	111	137	/	4	0					
PM	4:00 PM	2	148	21	43	222	0	0	0	0	9	0	18	463	0	0	0	0	0
	4:15 PM	0	141	24	38	195	0	0	0	0	14	0	22	434	0	0	0	0	0
	4:30 PM	0	187	30	41	221	1	0	0	0	3	0	31	514	0	0	0	0	0
	4:45 PM	0	172	22	32	181	0	0	0	0	9	0	23	439	0	1	0	0	1
	5:00 PM	0	185	27	36	238	0	0	0	1	2	0	24	513	0	0	0	0	0
	5:15 PM	0	173	17	32	192	0	0	0	1	7	0	27	449	0	0	0	0	0
	5:30 PM	0	171	18	35	193	0	0	0	0	11	0	24	452	0	0	0	0	0
	5:45 PM	1	123	16	26	132	0	0	0	0	10	0	23	331	0	0	0	0	0
	VOLUMES	3	1,300	175	283	1,574	1	0	0	2	65	0	192	3,595	0	1	0	0	1
	APPROACH %	0%	88%	12%	15%	85%	0%	0%	0%	100%	25%	0%	75%						
	APP/DEPART	1,478	/	1,493	1,858	/	1,641	2	/	457	257	/	4	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	717	96	141	832	1	0	0	2	21	0	105	1,915					
	APPROACH %	0%	88%	12%	14%	85%	0%	0%	0%	100%	17%	0%	83%						
	PEAK HR FACTOR		0.937			0.889			0.500			0.926		0.931					
	APP/DEPART	813	/	823	974	/	855	2	/	236	126	/	1	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	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

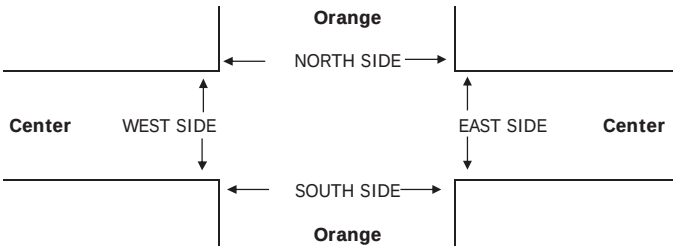
DATE:	LOCATION:	Riverside	PROJECT #:	SC0789
Thu, Dec 10, 15	NORTH & SOUTH:	Orange	LOCATION #:	2
	EAST & WEST:	Center	CONTROL:	STOP ALL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

		NORTHBOUND Orange			SOUTHBOUND Orange			EASTBOUND Center			WESTBOUND Center				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	1	0	6	1	0	2	0	29	0	7	30	3	79	0	0	0	0	0
	7:15 AM	3	0	15	0	0	0	1	27	0	18	31	0	95	0	0	0	0	0
	7:30 AM	1	1	15	2	0	0	4	22	0	12	37	2	96	0	0	0	0	0
	7:45 AM	7	0	14	1	0	0	1	26	2	20	36	5	112	0	0	0	0	0
	8:00 AM	1	0	10	0	0	0	2	31	3	15	30	1	93	0	0	0	0	0
	8:15 AM	2	1	14	4	0	2	0	29	2	18	27	0	99	0	0	0	0	0
	8:30 AM	1	0	9	2	0	1	3	36	1	15	45	5	118	0	0	0	0	0
	8:45 AM	4	0	14	2	0	1	1	33	3	12	44	1	115	0	0	0	0	0
	VOLUMES	20	2	97	12	0	6	12	233	11	117	280	17	807	0	0	0	0	0
	APPROACH %	17%	2%	82%	67%	0%	33%	5%	91%	4%	28%	68%	4%						
	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					
PM	4:00 PM	4	1	37	3	0	0	1	61	3	17	30	0	157	0	0	0	0	0
	4:15 PM	2	0	40	4	2	1	2	55	1	14	27	3	151	0	0	0	0	0
	4:30 PM	3	0	30	9	5	1	0	73	1	24	29	4	179	0	0	0	0	0
	4:45 PM	2	0	26	2	0	0	0	47	3	13	22	0	115	0	0	0	0	0
	5:00 PM	2	0	28	2	0	0	0	56	9	15	31	1	144	0	0	0	0	0
	5:15 PM	2	1	27	2	0	1	1	50	2	23	34	1	144	0	0	0	0	0
	5:30 PM	5	0	24	3	0	0	0	45	3	22	34	0	136	0	0	0	0	0
	5:45 PM	3	1	23	0	0	1	0	40	0	15	30	0	113	0	0	0	0	0
	VOLUMES	23	3	235	25	7	4	4	427	22	143	237	9	1,139	0	0	0	0	0
	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					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	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

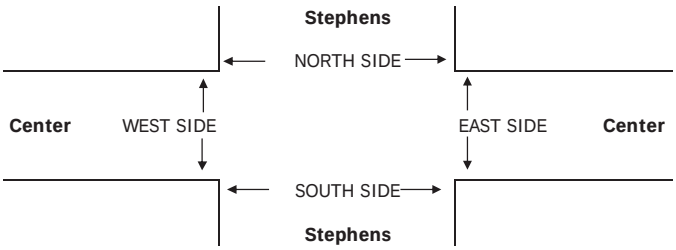
DATE:	LOCATION:	Riverside	PROJECT #:	SC0789
Thu, Dec 10, 15	NORTH & SOUTH:	Stephens	LOCATION #:	3
	EAST & WEST:	Center	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND Stephens			SOUTHBOUND Stephens			EASTBOUND Center			WESTBOUND Center				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 1	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	15	1	28	1	2	0	0	21	12	49	33	0	162	0	0	0	0	0
	7:15 AM	12	1	30	5	4	0	0	33	15	78	37	1	216	0	0	0	0	0
	7:30 AM	16	0	17	2	4	1	0	35	21	90	31	3	220	0	0	0	0	0
	7:45 AM	15	0	25	1	0	0	0	25	18	86	54	3	227	0	0	0	0	0
	8:00 AM	14	1	20	1	0	1	0	27	12	37	33	1	147	0	0	0	0	0
	8:15 AM	20	0	21	2	1	0	1	20	23	50	26	1	165	0	0	0	0	0
	8:30 AM	31	0	22	0	0	0	0	19	16	47	33	0	168	0	0	0	0	0
	8:45 AM	24	2	21	0	6	2	0	28	20	55	28	1	187	0	0	0	0	0
	VOLUMES	147	5	184	12	17	4	1	208	137	492	275	10	1,492	0	0	0	0	0
	APPROACH %	44%	1%	55%	36%	52%	12%	0%	60%	40%	63%	35%	1%						
	APP/DEPART	336	/	16	33	/	646	346	/	404	777	/	426	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	58	2	100	9	10	1	0	114	66	303	155	7	825					
	APPROACH %	36%	1%	63%	45%	50%	5%	0%	63%	37%	65%	33%	2%						
	PEAK HR FACTOR		0.909			0.556			0.804			0.813		0.909					
	APP/DEPART	160	/	9	20	/	379	180	/	223	465	/	214	0					
PM	4:00 PM	25	1	10	1	1	2	0	57	35	45	24	0	201	0	0	0	0	0
	4:15 PM	24	1	11	1	0	0	2	62	31	50	25	2	209	0	0	0	0	0
	4:30 PM	20	2	16	0	1	0	1	73	37	42	36	1	229	0	0	0	0	0
	4:45 PM	12	2	14	1	2	1	2	52	32	45	25	2	190	0	0	0	1	1
	5:00 PM	24	0	17	1	0	1	1	56	32	50	33	4	219	0	0	0	0	0
	5:15 PM	23	1	12	2	0	0	0	47	29	32	33	1	180	0	0	0	0	0
	5:30 PM	16	2	13	2	1	0	1	43	26	21	31	2	158	0	0	0	0	0
	5:45 PM	15	1	10	1	0	1	0	46	24	17	28	1	144	0	0	0	0	0
	VOLUMES	159	10	103	9	5	5	7	436	246	302	235	13	1,530	0	0	0	1	1
	APPROACH %	58%	4%	38%	47%	26%	26%	1%	63%	36%	55%	43%	2%						
	APP/DEPART	272	/	30	19	/	552	689	/	549	550	/	399	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	80	5	58	3	3	2	6	243	132	187	119	9	847					
	APPROACH %	56%	3%	41%	38%	38%	25%	2%	64%	35%	59%	38%	3%						
	PEAK HR FACTOR		0.872			0.500			0.858			0.905		0.925					
	APP/DEPART	143	/	20	8	/	321	381	/	305	315	/	201	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	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

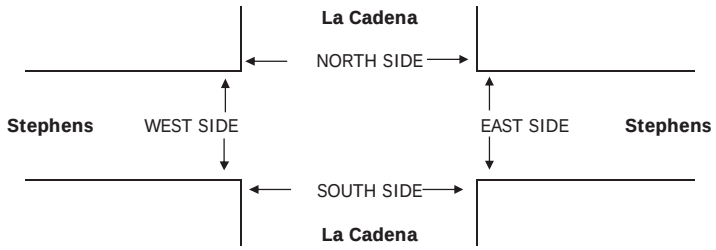
DATE:	LOCATION:	Riverside	PROJECT #:	SC0789
Thu, Dec 10, 15	NORTH & SOUTH:	La Cadena	LOCATION #:	4
	EAST & WEST:	Stephens	CONTROL:	STOP ALL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND La Cadena			SOUTHBOUND La Cadena			EASTBOUND Stephens			WESTBOUND Stephens				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	9	26	2	9	32	10	12	67	11	19	24	1	222	0	0	0	0	0
	7:15 AM	10	27	1	12	46	8	15	77	14	21	25	2	258	0	0	0	0	0
	7:30 AM	11	10	6	19	52	7	13	83	12	25	20	0	258	0	0	0	0	0
	7:45 AM	7	11	2	7	43	8	5	51	10	42	22	2	210	0	0	0	1	1
	8:00 AM	3	13	2	4	29	11	6	42	22	85	28	5	250	0	0	0	1	1
	8:15 AM	5	12	4	8	44	9	4	43	21	73	29	2	254	0	0	0	0	0
	8:30 AM	7	15	4	6	41	8	18	39	11	42	31	3	225	0	0	0	0	0
	8:45 AM	7	10	4	5	12	5	8	46	10	12	23	1	143	0	0	0	0	0
	VOLUMES	59	124	25	70	299	66	81	448	111	319	202	16	1,820	0	0	0	2	2
	APPROACH %	28%	60%	12%	16%	69%	15%	13%	70%	17%	59%	38%	3%						
	APP/DEPART	208	/	221	435	/	727	640	/	545	537	/	327	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	31	61	11	42	170	34	39	253	58	173	95	9	976					
	APPROACH %	30%	59%	11%	17%	69%	14%	11%	72%	17%	62%	34%	3%						
	PEAK HR FACTOR		0.678			0.788			0.810			0.587		0.946					
	APP/DEPART	103	/	109	246	/	399	350	/	308	277	/	160	0					
PM	4:00 PM	10	30	8	20	53	14	19	38	23	19	15	1	250	0	0	0	0	0
	4:15 PM	10	41	3	15	83	8	7	41	23	17	17	0	265	0	0	0	0	0
	4:30 PM	6	36	2	21	82	8	18	46	14	14	13	0	260	0	0	0	0	0
	4:45 PM	9	31	5	20	78	8	19	43	14	20	14	1	262	0	0	0	1	1
	5:00 PM	8	40	7	16	84	14	17	43	17	24	13	2	285	0	0	0	0	0
	5:15 PM	6	49	0	18	100	15	9	31	15	9	15	2	269	0	0	0	0	0
	5:30 PM	7	32	3	11	90	10	12	45	17	31	20	0	278	0	0	0	0	0
	5:45 PM	6	37	1	9	81	14	8	21	18	29	10	0	234	1	0	0	0	1
	VOLUMES	62	296	29	130	651	91	109	308	141	163	117	6	2,103	1	0	0	1	2
	APPROACH %	16%	76%	7%	15%	75%	10%	20%	55%	25%	57%	41%	2%						
	APP/DEPART	387	/	411	872	/	955	558	/	468	286	/	269	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	30	152	15	65	352	47	57	162	63	84	62	5	1,094					
	APPROACH %	15%	77%	8%	14%	76%	10%	20%	57%	22%	56%	41%	3%						
	PEAK HR FACTOR		0.895			0.872			0.916			0.740		0.960					
	APP/DEPART	197	/	214	464	/	498	282	/	243	151	/	139	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	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

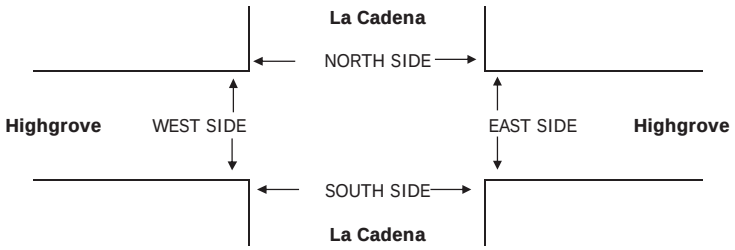
DATE:					
Thu, Dec 10, 15	LOCATION:	Riverside	PROJECT #:	SC0789
	NORTH & SOUTH:	La Cadena	LOCATION #:	5
	EAST & WEST:	Highgrove	CONTROL:	STOP ALL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND La Cadena			SOUTHBOUND La Cadena			EASTBOUND Highgrove			WESTBOUND Highgrove				U-TURNS				
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL 0	ET 1	ER 0	WL 0	WT X	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	3	8	0	9	0	19	53	0	4	0	1	97	0	0	0	0	0
	7:15 AM	0	10	9	0	21	0	10	32	0	5	0	2	89	0	0	0	0	0
	7:30 AM	0	9	11	0	22	0	8	33	0	9	0	0	92	0	0	0	0	0
	7:45 AM	0	10	10	0	25	0	8	44	0	11	0	1	109	0	0	0	0	0
	8:00 AM	0	10	9	0	16	0	3	31	0	9	0	1	79	0	0	0	0	0
	8:15 AM	0	8	2	0	19	0	7	26	0	5	0	1	68	0	0	0	0	0
	8:30 AM	0	7	6	0	23	0	6	42	0	8	0	1	93	0	0	0	0	0
	8:45 AM	0	10	7	2	17	0	11	48	0	4	0	0	99	0	0	0	0	0
	VOLUMES	0	67	62	2	152	0	72	309	0	55	0	7	726	0	0	0	0	0
	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					
PM	4:00 PM	0	21	13	0	33	0	11	41	0	2	0	4	125	0	0	0	0	0
	4:15 PM	0	17	12	0	27	0	13	41	1	7	0	1	119	0	0	0	0	0
	4:30 PM	0	9	14	0	33	0	5	50	0	6	0	0	117	0	0	0	0	0
	4:45 PM	0	11	18	0	20	0	11	47	0	7	0	0	114	0	0	0	0	0
	5:00 PM	0	24	17	0	28	0	5	57	0	5	0	1	137	0	0	0	0	0
	5:15 PM	0	27	21	0	45	0	7	47	2	6	0	2	157	0	0	0	0	0
	5:30 PM	0	24	15	1	42	0	7	51	0	4	0	0	144	0	0	0	0	0
	5:45 PM	0	19	12	0	38	0	7	55	1	4	0	0	136	0	0	0	0	0
	VOLUMES	0	152	122	1	266	0	66	389	4	41	0	8	1,049	0	0	0	0	0
	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					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	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

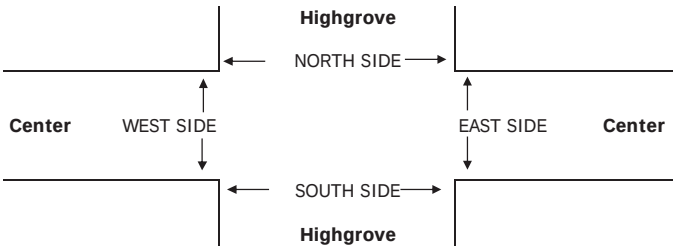
DATE:	LOCATION:	Riverside	PROJECT #:	SC0789
Thu, Dec 10, 15	NORTH & SOUTH:	Highgrove	LOCATION #:	6
	EAST & WEST:	Center	CONTROL:	STOP N/S

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND Highgrove			SOUTHBOUND Highgrove			EASTBOUND Center			WESTBOUND Center				U-TURNS				
	LANES:	NL 0	NT 1	NR 1	SL 0	ST 1	SR 0	EL 0	ET 1	ER 1	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	10	0	45	2	0	2	1	49	5	0	69	1	184	0	0	0	0	0
	7:15 AM	7	0	37	0	0	6	0	57	6	2	119	1	235	0	0	0	0	0
	7:30 AM	12	0	33	0	1	9	0	51	2	5	117	3	233	0	0	0	0	0
	7:45 AM	21	0	36	0	0	5	0	48	9	4	83	0	206	0	0	0	0	0
	8:00 AM	13	0	29	1	0	5	0	39	7	4	69	0	167	0	0	0	0	0
	8:15 AM	12	0	21	1	0	3	0	41	5	2	58	1	144	0	0	0	0	0
	8:30 AM	21	0	22	0	0	1	0	41	5	4	56	0	150	0	0	0	0	0
	8:45 AM	21	0	34	0	0	2	0	46	4	0	53	0	160	0	0	0	0	0
	VOLUMES	117	0	257	4	1	33	1	372	43	21	624	6	1,479	0	0	0	0	0
	APPROACH %	31%	0%	69%	11%	3%	87%	0%	89%	10%	3%	96%	1%						
	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			0.625			0.905			0.808		0.913					
	APP/DEPART	201	/	6	25	/	34	228	/	358	404	/	460	0					
PM	4:00 PM	9	0	45	0	1	9	1	67	3	1	52	0	188	0	0	0	0	0
	4:15 PM	8	0	41	0	0	6	0	68	5	3	47	2	180	0	0	0	0	0
	4:30 PM	11	1	47	0	0	5	1	74	3	1	59	1	203	0	0	0	0	0
	4:45 PM	13	0	57	0	0	3	1	65	5	4	53	4	205	0	0	0	0	0
	5:00 PM	17	0	49	3	1	7	1	67	3	1	53	3	205	0	0	0	0	0
	5:15 PM	9	2	67	1	0	1	0	51	5	1	57	2	196	0	0	0	0	0
	5:30 PM	11	0	56	1	0	7	0	70	2	2	65	0	214	0	0	0	0	0
	5:45 PM	12	0	56	1	0	5	0	58	3	2	36	1	174	0	0	0	0	0
	VOLUMES	90	3	418	6	2	43	4	520	29	15	422	13	1,565	0	0	0	0	0
	APPROACH %	18%	1%	82%	12%	4%	84%	1%	94%	5%	3%	94%	3%						
	APP/DEPART	511	/	20	51	/	46	553	/	944	450	/	555	0					
	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			0.545			0.938			0.914		0.958					
	APP/DEPART	281	/	13	24	/	24	270	/	487	245	/	296	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	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

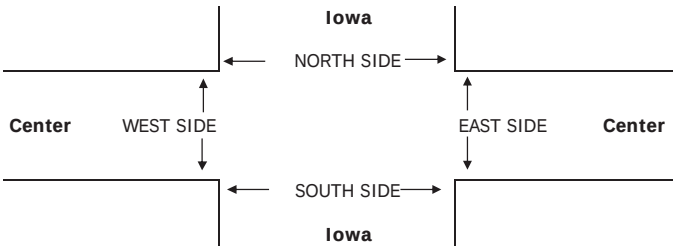
DATE:	LOCATION:	Riverside	PROJECT #:	SC0789
Thu, Dec 10, 15	NORTH & SOUTH:	Iowa	LOCATION #:	7
	EAST & WEST:	Center	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND Iowa			SOUTHBOUND Iowa			EASTBOUND Center			WESTBOUND Center				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	9	75	13	6	69	17	24	51	21	21	42	18	366	0	0	2	13	15
	7:15 AM	16	83	27	11	113	28	22	55	17	25	79	15	491	0	0	1	3	4
	7:30 AM	12	89	22	8	135	28	11	56	17	47	86	24	535	0	0	1	5	6
	7:45 AM	22	63	11	5	173	21	29	42	22	39	59	9	495	0	0	5	5	10
	8:00 AM	16	98	19	4	134	5	20	29	18	15	31	7	396	0	0	3	8	11
	8:15 AM	15	103	9	5	114	6	20	20	21	18	40	7	378	0	0	1	8	9
	8:30 AM	13	70	8	4	110	15	19	17	27	19	33	4	339	0	1	1	8	10
	8:45 AM	10	75	11	0	109	15	24	27	28	15	24	12	350	0	0	3	4	7
	VOLUMES	113	656	120	43	957	135	169	297	171	199	394	96	3,350	0	1	17	54	72
	APPROACH %	13%	74%	13%	4%	84%	12%	27%	47%	27%	29%	57%	14%						
	APP/DEPART	889	/	905	1,135	/	1,273	637	/	513	689	/	659	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	66	333	79	28	555	82	82	182	74	126	255	55	1,917					
	APPROACH %	14%	70%	17%	4%	83%	12%	24%	54%	22%	29%	58%	13%						
	PEAK HR FACTOR		0.898			0.835			0.899			0.694		0.896					
	APP/DEPART	478	/	460	665	/	734	338	/	310	436	/	413	0					
PM	4:00 PM	9	140	12	5	133	12	44	58	10	28	32	6	489	0	0	0	7	7
	4:15 PM	16	138	9	6	144	16	41	50	18	35	20	9	502	0	0	0	13	13
	4:30 PM	21	154	12	14	148	12	44	57	21	33	24	6	546	0	0	2	7	9
	4:45 PM	20	145	13	14	182	12	44	57	22	31	24	10	574	0	0	4	5	9
	5:00 PM	23	178	15	7	149	21	49	49	20	22	13	5	551	0	0	0	7	7
	5:15 PM	18	148	23	6	153	11	42	59	19	38	30	5	552	0	0	1	7	8
	5:30 PM	17	141	16	15	152	10	35	74	17	29	38	4	548	0	0	0	0	0
	5:45 PM	16	133	13	16	148	9	31	67	16	26	13	6	494	0	0	0	0	0
	VOLUMES	140	1,177	113	83	1,209	103	330	471	143	242	194	51	4,256	0	0	7	46	53
	APPROACH %	10%	82%	8%	6%	87%	7%	35%	50%	15%	50%	40%	10%						
	APP/DEPART	1,430	/	1,551	1,395	/	1,548	944	/	713	487	/	444	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	78	612	67	42	636	54	170	239	78	120	105	24	2,225					
	APPROACH %	10%	81%	9%	6%	87%	7%	35%	49%	16%	48%	42%	10%						
	PEAK HR FACTOR		0.876			0.880			0.966			0.853		0.969					
	APP/DEPART	757	/	801	732	/	815	487	/	367	249	/	242	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

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

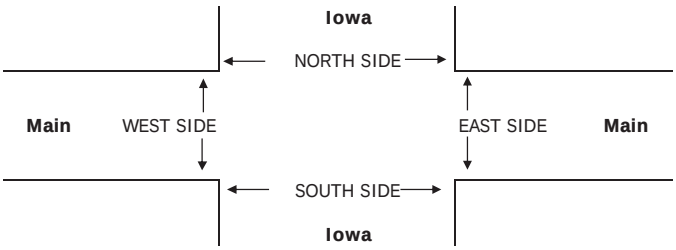
DATE:	LOCATION:	Riverside	PROJECT #:	SC0789
Thu, Dec 10, 15	NORTH & SOUTH:	Iowa	LOCATION #:	8
	EAST & WEST:	Main	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND Iowa			SOUTHBOUND Iowa			EASTBOUND Main			WESTBOUND Main				U-TURNS				
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 1	WT X	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	103	35	78	94	0	0	0	0	14	0	70	394	0	0	0	0	0
	7:15 AM	0	116	37	89	145	0	0	0	0	33	0	100	520	0	0	0	0	0
	7:30 AM	0	101	13	29	164	0	0	0	0	31	0	72	410	0	0	0	0	0
	7:45 AM	0	109	15	20	189	0	0	0	0	25	0	26	384	0	0	0	0	0
	8:00 AM	0	114	12	18	137	0	0	0	0	5	0	20	306	0	0	0	0	0
	8:15 AM	0	119	15	16	103	0	0	0	0	9	0	11	273	0	0	0	0	0
	8:30 AM	0	96	16	16	147	0	0	0	0	9	0	14	298	0	0	0	0	0
	8:45 AM	0	107	12	11	127	0	0	0	0	8	0	14	279	0	0	0	0	0
	VOLUMES	0	865	155	277	1,106	0	0	0	0	134	0	327	2,864	0	0	0	0	0
	APPROACH %	0%	85%	15%	20%	80%	0%	0%	0%	0%	29%	0%	71%						
	APP/DEPART	1,020	/	1,192	1,383	/	1,240	0	/	432	461	/	0	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	429	100	216	592	0	0	0	0	103	0	268	1,708					
	APPROACH %	0%	81%	19%	27%	73%	0%	0%	0%	0%	28%	0%	72%						
	PEAK HR FACTOR		0.864			0.863			0.000			0.697		0.821					
	APP/DEPART	529	/	697	808	/	695	0	/	316	371	/	0	0					
PM	4:00 PM	0	181	29	13	144	0	0	0	0	23	0	31	421	0	0	0	0	0
	4:15 PM	0	177	24	24	183	0	0	0	0	17	0	20	445	0	0	0	0	0
	4:30 PM	0	191	19	18	169	0	0	0	0	21	0	42	460	0	0	0	0	0
	4:45 PM	0	174	25	33	165	0	0	0	0	26	0	43	466	0	0	0	0	0
	5:00 PM	0	208	35	27	144	0	0	0	0	25	0	46	485	0	0	0	0	0
	5:15 PM	0	183	33	26	185	0	0	0	0	33	0	44	504	0	0	0	0	0
	5:30 PM	0	166	29	27	182	0	0	0	0	28	0	31	463	0	0	0	0	0
	5:45 PM	0	187	25	19	193	0	0	0	0	17	0	11	452	0	0	0	0	0
	VOLUMES	0	1,467	219	187	1,365	0	0	0	0	190	0	268	3,696	0	0	0	0	0
	APPROACH %	0%	87%	13%	12%	88%	0%	0%	0%	0%	41%	0%	59%						
	APP/DEPART	1,686	/	1,735	1,552	/	1,555	0	/	406	458	/	0	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	731	122	113	676	0	0	0	0	112	0	164	1,918					
	APPROACH %	0%	86%	14%	14%	86%	0%	0%	0%	0%	41%	0%	59%						
	PEAK HR FACTOR		0.878			0.935			0.000			0.896		0.951					
	APP/DEPART	853	/	895	789	/	788	0	/	235	276	/	0	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	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

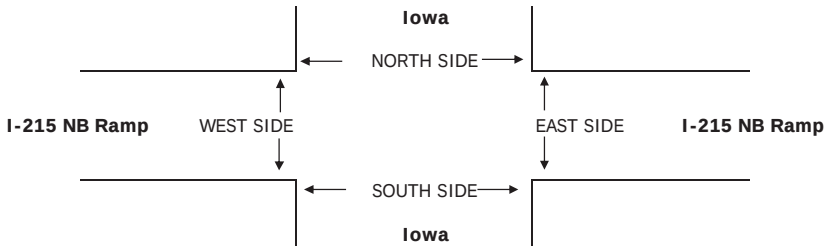
DATE:	LOCATION:	Riverside	PROJECT #:	SC0789
Thu, Dec 10, 15	NORTH & SOUTH:	Iowa	LOCATION #:	9
	EAST & WEST:	I-215 NB Ramp	CONTROL:	SIGNAL

NOTES:

AM PM MD OTHER OTHER — ▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

		NORTHBOUND Iowa			SOUTHBOUND Iowa			EASTBOUND I-215 NB Ramp			WESTBOUND I-215 NB Ramp				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 2	ER X	WL X	WT 0.5	WR 0.5	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	0	0	21	0	223	75	118	0	0	5	70	512	0	0	0	0	0
	7:15 AM	0	0	0	20	0	164	74	106	0	0	2	60	426	0	0	0	0	0
	7:30 AM	0	0	0	24	0	189	86	141	0	0	3	50	493	0	0	0	0	0
	7:45 AM	0	0	0	26	0	197	49	75	0	0	3	52	402	0	1	0	0	1
	8:00 AM	0	0	0	15	0	145	49	101	0	0	9	40	359	0	0	0	0	0
	8:15 AM	0	0	0	17	0	110	43	98	0	0	3	43	314	0	0	0	0	0
	8:30 AM	0	0	0	23	0	148	23	66	0	0	5	38	303	0	0	0	0	0
	8:45 AM	0	0	0	18	0	122	39	89	0	0	3	46	317	0	0	0	0	0
	VOLUMES	0	0	0	164	0	1,298	438	794	0	0	33	399	3,126	0	1	0	0	1
	APPROACH %	0%	0%	0%	11%	0%	89%	36%	64%	0%	0%	8%	92%						
	APP/DEPART	0	/	838	1,462	/	0	1,232	/	957	432	/	1,331	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	0	0	91	0	773	284	440	0	0	13	232	1,833					
	APPROACH %	0%	0%	0%	11%	0%	89%	39%	61%	0%	0%	5%	95%						
	PEAK HR FACTOR		0.000			0.885			0.797			0.817		0.895					
	APP/DEPART	0	/	517	864	/	0	724	/	530	245	/	786	0					
PM	4:00 PM	0	0	0	27	0	154	61	126	0	0	6	60	434	0	0	0	0	0
	4:15 PM	0	0	0	25	0	194	61	137	0	0	4	69	490	0	0	0	0	0
	4:30 PM	0	0	0	25	0	175	76	151	0	0	6	64	497	0	0	0	0	0
	4:45 PM	0	0	0	19	0	168	73	138	0	0	5	78	481	0	0	0	0	0
	5:00 PM	0	0	0	35	0	171	83	148	0	0	6	74	517	0	0	0	0	0
	5:15 PM	0	0	0	32	0	207	110	153	0	0	5	87	594	0	0	0	0	0
	5:30 PM	0	0	0	29	0	197	66	123	0	0	5	85	505	0	0	0	0	0
	5:45 PM	0	0	0	25	0	189	68	124	0	0	5	71	482	0	0	0	0	0
	VOLUMES	0	0	0	217	0	1,455	598	1,100	0	0	42	588	4,000	0	0	0	0	0
	APPROACH %	0%	0%	0%	13%	0%	87%	35%	65%	0%	0%	7%	93%						
	APP/DEPART	0	/	1,186	1,672	/	0	1,698	/	1,317	630	/	1,497	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	0	0	0	121	0	764	327	548	0	0	21	317	2,098					
	APPROACH %	0%	0%	0%	14%	0%	86%	37%	63%	0%	0%	6%	94%						
	PEAK HR FACTOR		0.000			0.926			0.832			0.918		0.883					
	APP/DEPART	0	/	644	885	/	0	875	/	669	338	/	785	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX D

Explanation and Calculation of Intersection Delay

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 DESCRIPTION[1]

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*					

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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*					

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*Orange Street/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing*

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*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*Orange Street/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing*

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

	Eastbound		Westbound		Northbound		Southbound	
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

	Eastbound		Westbound		Northbound		Southbound	
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*							

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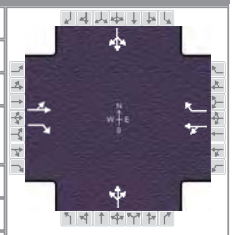
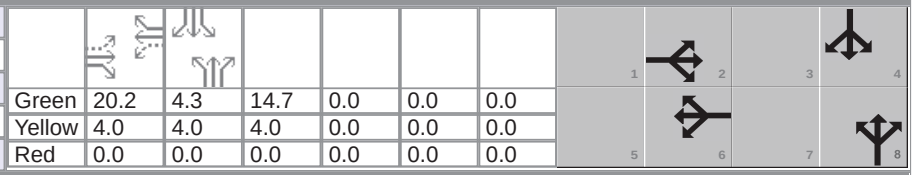
HCS 2010 Signalized Intersection Results Summary

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	0.91
Intersection	Stephens Avenue/Center S	Analysis Year	Existing	Analysis Period	1> 7:00
File Name	AME5.xus				
Project Description	Center Street Warehouse				



Demand Information	EB			WB			NB			SB		
Approach Movement	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



	EB		WB			NB		
Green	20.2	4.3	14.7	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		

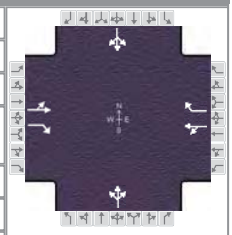
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		7.0		12.0		12.0
Phase Duration, s		24.2		24.2		18.7		8.3
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		3.2		3.2		3.3		3.1
Queue Clearance Time (g_s), s		4.2		18.6		6.3		2.6
Green Extension Time (g_e), 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	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		126	73		503	8		176			22	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1899	1610		1444	1610		1680			1842	
Queue Service Time (g_s), s		0.0	1.5		14.5	0.1		4.3			0.6	
Cycle Queue Clearance Time (g_c), 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 (c_a), 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 (d_1), s/veh		10.1	9.8		14.4	9.4		14.6			21.8	
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		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	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.1	B	2.1	B	2.3	B	2.3	B
Bicycle LOS Score / LOS	0.8	A	1.3	A	0.8	A	0.5	A

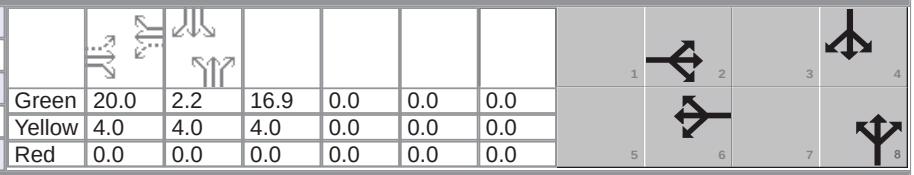
HCS 2010 Signalized Intersection Results Summary

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	Existing	Analysis Period	1> 7:00
File Name	PME5.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	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



Green	20.0	2.2	16.9	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		7.0		12.0		12.0
Phase Duration, s		24.0		24.0		20.9		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		7.1		11.5		5.3		2.2
Green Extension Time (g_e), 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	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		268	142		329	10		154			9	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1895	1610		1376	1610		1726			1786	
Queue Service Time (g_s), s		0.0	3.0		4.4	0.2		3.3			0.2	
Cycle Queue Clearance Time (g_c), 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 (c_a), 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 (d_1), s/veh		11.0	10.4		12.2	9.5		12.6			23.5	
Incremental Delay (d_2), s/veh		0.1	0.1		0.2	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		11.1	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	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	1.0	A	0.7	A	0.5	A

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*La Cadena/Stephens-I-215 SB*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing*

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*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*La Cadena/Stephens-I-215 SB*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing*

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*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*La Cadena/Highgrove-I-215 NB*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing*

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*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*La Cadena/Highgrove-I-215 NB*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing*

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*							

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*Highgrove Place/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing*

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*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*Highgrove Place/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing*

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*	

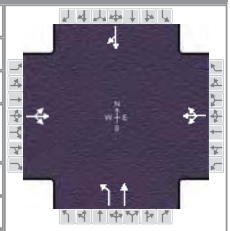
Delay, Queue Length, and Level of Service

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+™ Version 5.5 Generated: 1/18/2016 5:22 PM

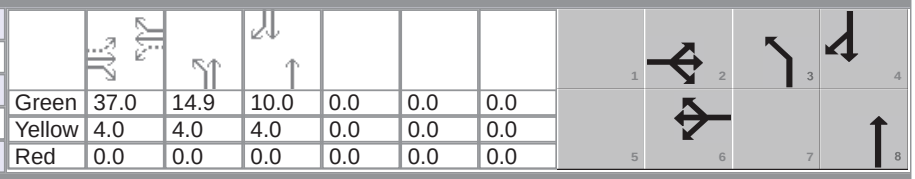
HCS 2010 Signalized Intersection Results Summary

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 Ran	Analysis Year	Existing	Analysis Period	1> 7:00
File Name	AME9.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	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

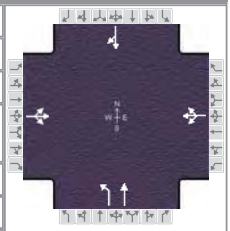
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		8.0		8.0	2.0	4.0		8.3
Phase Duration, s		41.0		41.0	18.9	32.9		14.0
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		3.3		0.0	3.1	3.1		3.1
Queue Clearance Time (g_s), s		39.0			14.5	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	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		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	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.2	B	2.1	B	2.1	B	2.1	B
Bicycle LOS Score / LOS	2.1	B	0.5	A	1.8	A	0.9	A

HCS 2010 Signalized Intersection Results Summary

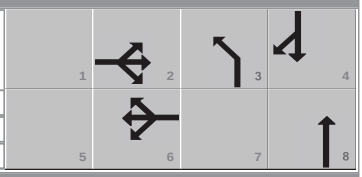
General Information				Intersection Information	
Agency	Kunzman Associates, Inc.			Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other
Jurisdiction	Riverside	Time Period	Evening Peak Hour	PHF	0.88
Intersection	Iowa Avenue-I-215 NB Ran	Analysis Year	Existing	Analysis Period	1> 7:00
File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



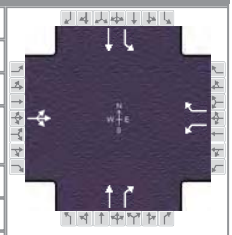
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		8.0		8.0	2.0	4.0		8.3
Phase Duration, s		34.0		34.0	20.0	34.0		14.0
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		3.3		0.0	3.1	3.1		3.1
Queue Clearance Time (g_s), s		32.0			15.4	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

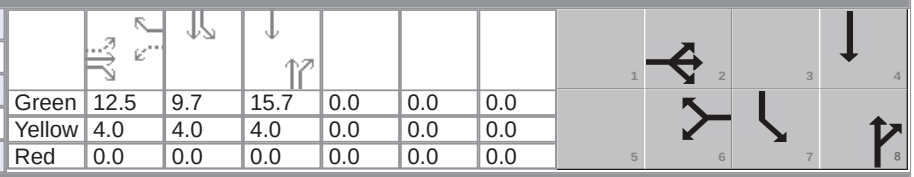
HCS 2010 Signalized Intersection Results Summary

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	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		429	0	216	592	

Signal Information			
Cycle, s	50.0	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	12.5	9.7	15.7	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

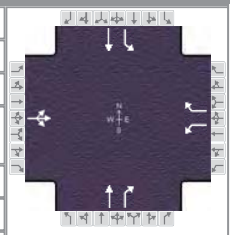
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		5.0		7.3	2.0	4.0
Phase Duration, s		16.5		16.5		19.7	13.7	33.4
Change Period, ($Y+R_c$), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (*MAH*), s		0.0		3.3		3.0	3.1	3.0
Queue Clearance Time (g_s), s				11.5		15.0	8.9	14.6
Green Extension Time (g_e), 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	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		523	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		2.8		9.5		13.0	0.0	6.9	12.6	
Cycle Queue Clearance Time (g_c), 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 (c_a), 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 (d_1), s/veh				15.1		17.6		16.2	0.0	19.0	6.8	
Incremental Delay (d_2), s/veh		0.0		0.1		1.5		8.0	0.0	1.2	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				15.1		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	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		F	1.4	A	2.1	B

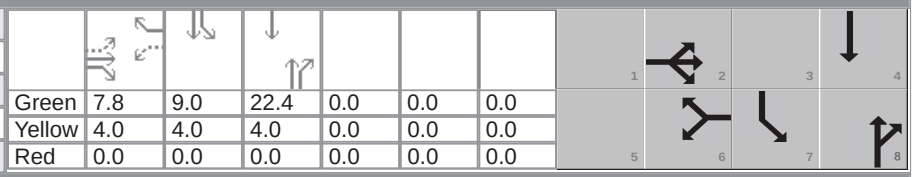
HCS 2010 Signalized Intersection Results Summary

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	Analysis Period	1> 7:00
File Name	PME10.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		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
Force Mode	Fixed	Simult. Gap N/S	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
Red	0.0	0.0	0.0	0.0	0.0	0.0

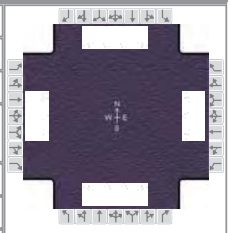
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		5.0		7.3	2.0	4.0
Phase Duration, s		11.8		11.8		26.4	13.0	39.4
Change Period, ($Y+R_c$), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (*MAH*), s		0.0		3.2		3.0	3.1	3.0
Queue Clearance Time (g_s), s				7.2		21.6	5.0	11.5
Green Extension Time (g_e), s		0.0		0.6		0.8	0.1	2.6
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	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		769	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		5.2		19.6	0.0	3.0	9.5	
Cycle Queue Clearance Time (g_c), 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 (c_a), 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 (d_1), s/veh				19.7		20.6		13.6	0.0	18.6	3.9	
Incremental Delay (d_2), s/veh		0.0		0.1		1.4		13.2	0.0	0.3	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				19.8		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	6.3		A
Intersection Delay, s/veh / LOS	16.9						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		F	1.8	A	1.9	A

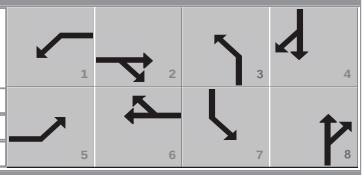
HCS 2010 Signalized Intersection Results Summary

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	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		



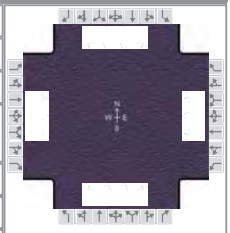
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	4.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	10.6	13.2	11.8	14.5	9.9	19.5	7.3	16.9
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Queue 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		18.0	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

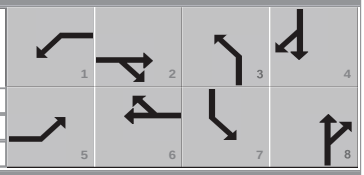
General Information				Intersection Information	
Agency	Kunzman Associates, Inc.			Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other
Jurisdiction	Riverside	Time Period	Evening Peak Hour	PHF	0.97
Intersection	Iowa Avenue/Center Street	Analysis Year	Existing	Analysis Period	1> 7:00
File 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
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	6.6	0.7	8.0	3.7	1.8	13.8	
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	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*					

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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*					

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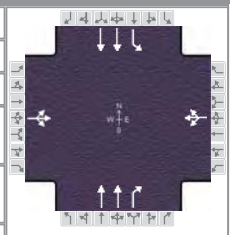
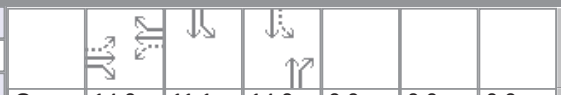
HCS 2010 Signalized Intersection Results Summary

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	0.95
Intersection	Main Street/Riverside Aven	Analysis Year	Existing Plus Project	Analysis Period	1> 7:00
File Name	AMEP1I.xus				
Project Description	Center Street Warehouse - With Improvements				

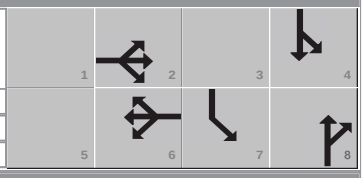


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	0	0	0	40	0	111		633	61	106	645	

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



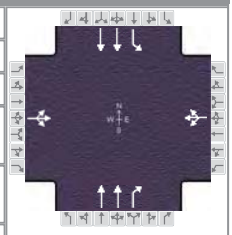
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		8.0		7.3	1.0	4.0
Phase Duration, s		18.0		18.0		18.0	15.1	33.1
Change Period, (*Y*+*Rc*), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (*MAH*), s		0.0		3.3		3.0	3.1	3.0
Queue Clearance Time (g_s), s				5.9		10.4	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

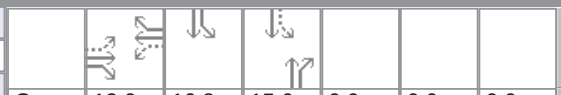
HCS 2010 Signalized Intersection Results Summary

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 Aven	Analysis Year	Existing Plus Project	Analysis Period	1> 7:00
File Name	PMEP1I.xus				
Project Description	Center Street Warehouse - With Improvements				

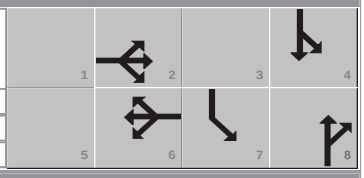


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	0	0	0	43	0	130		717	108	155	832	

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	1.3	A	1.4	A

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*Project West Acc/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing Plus Project*

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*				

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*Project West Acc/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing Plus Project*

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*				

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*Project East Acc/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing Plus Project*

Project Description *Center Street Warehouse*

East/West Street: *Center Street* | North/South Street: *Project EastAccess*

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*					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*Project East Acc/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing Plus Project*

Project Description *Center Street Warehouse*

East/West Street: *Center Street* | North/South Street: *Project EastAccess*

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*				

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*Orange Street/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing Plus Project*

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*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*Orange Street/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing Plus Project*

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*							

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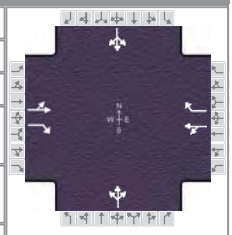
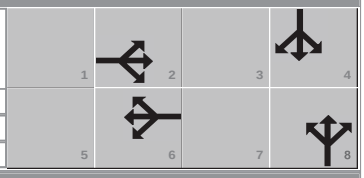
HCS 2010 Signalized Intersection Results Summary

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	0.91
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					EB		WB			NB	
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	



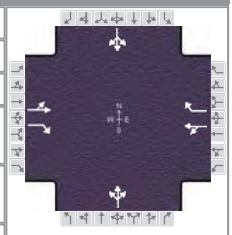
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		7.0		12.0		12.0
Phase Duration, s		28.4		28.4		17.7		7.9
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		3.2		3.2		3.2		3.1
Queue Clearance Time (g_s), s		4.6		22.5		9.1		2.6
Green 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

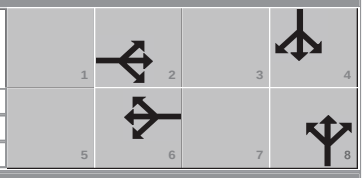
HCS 2010 Signalized Intersection Results Summary

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					EB		WB			NB			SB		
Cycle, s	50.9	Reference Phase	2												
Offset, s	0	Reference Point	End	Green	19.0	2.2	17.7	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	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	1.1	A	0.8	A	0.5	A

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*La Cadena/Stephens-I-215 SB*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing Plus Project*

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*							

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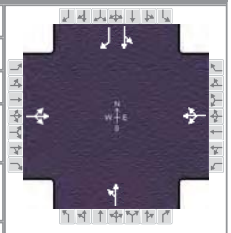
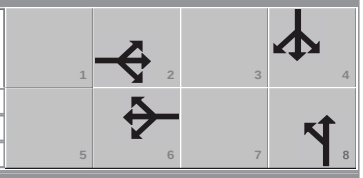
HCS 2010 Signalized Intersection Results Summary

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	0.95
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					EB		WB				NB				SB			
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								
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		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
Bicycle LOS Score / LOS	1.1	A	1.2	A	0.6	A	0.9	A

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*La Cadena/Stephens-I-215 SB*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing Plus Project*

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*							

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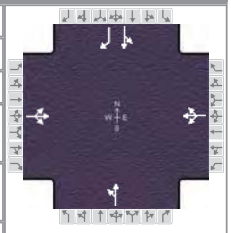
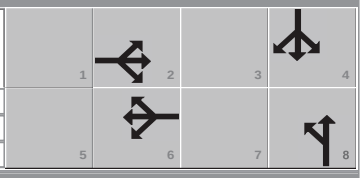
HCS 2010 Signalized Intersection Results Summary

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	0.96
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									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On	Green	12.9	14.0	12.1	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		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
Bicycle LOS Score / LOS	1.1	A	0.8	A	0.8	A	1.3	A

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*La Cadena/Highgrove-I-215 NB*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing Plus Project*

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*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*La Cadena/Highgrove-I-215 NB*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing Plus Project*

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*							

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*Highgrove Place/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*Existing Plus Project*

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*		

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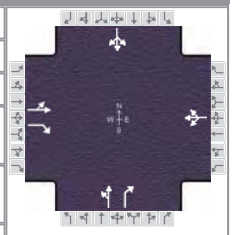
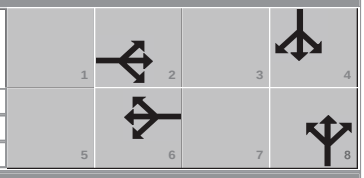
HCS 2010 Signalized Intersection Results Summary

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	0.91
Intersection	Highgrove Place/Center St	Analysis Year	Existing Plus Project	Analysis Period	1> 7:00
File Name	AMEP8I.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	229	0	11	408	5	122	1	151	2	1	22

Signal Information					EB		WB			NB		
Cycle, s	51.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	20.0	3.2	15.8	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		



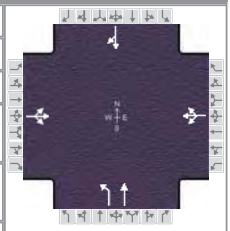
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		8.0		11.0		12.0
Phase Duration, s		24.0		24.0		19.8		7.2
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		3.0		3.0		3.3		3.3
Queue Clearance Time (g_s), s		6.8		12.1		6.0		2.8
Green 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

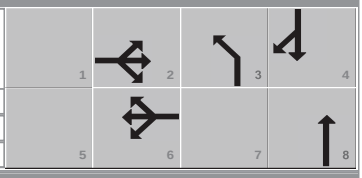
HCS 2010 Signalized Intersection Results Summary

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 Ran	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		



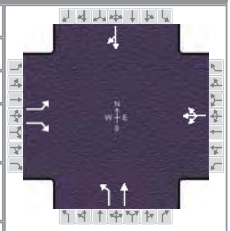
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		8.0		8.0	2.0	4.0		8.3
Phase Duration, s		34.0		34.0	20.0	34.0		14.0
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		3.3		0.0	3.1	3.1		3.1
Queue Clearance Time (g_s), s		32.0			15.4	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

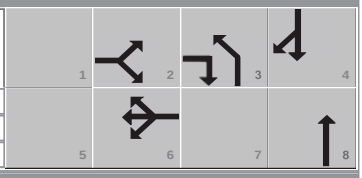
HCS 2010 Signalized Intersection Results Summary

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 Ran	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	Green	15.0	21.0	31.4	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		



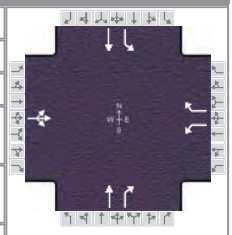
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		5.0		8.0		10.0		12.0
Phase Duration, s		19.0		19.0		35.4		25.0
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		3.3		0.0		3.1		3.3
Queue Clearance Time (g_s), s		17.0				29.1		20.1
Green Extension Time (g_e), 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 (g_s), s	5.3		15.0		0.0		12.4	27.1			18.1	
Cycle Queue Clearance Time (g_c), 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 (c_a), 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 (d_1), s/veh	28.3		14.9				18.2	22.7			28.2	
Incremental Delay (d_2), s/veh	0.2		13.9		0.0		0.2	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		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	C	
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	1.4	A	0.5	A	2.2	B	1.4	A

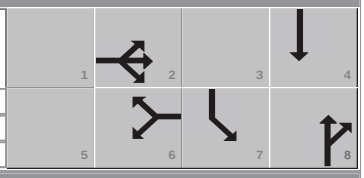
HCS 2010 Signalized Intersection Results Summary

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	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									
				Green	12.8	9.8	16.5	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		



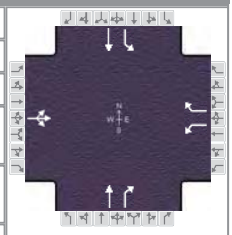
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		5.0		7.3	2.0	4.0
Phase Duration, s		16.8		16.8		20.5	13.8	34.3
Change Period, ($Y+R_c$), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (*MAH*), s		0.0		3.3		3.0	3.1	3.0
Queue Clearance Time (g_s), s				11.8		15.9	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	1.7	B	1.4	A	2.1	B

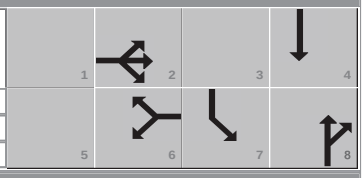
HCS 2010 Signalized Intersection Results Summary

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					EB			WB			NB		
Cycle, s	50.6	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	7.7	7.3		23.5	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		



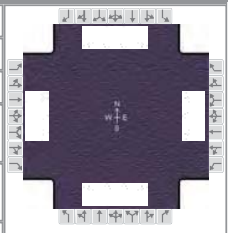
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		5.0		7.3	2.0	4.0
Phase Duration, s		11.7		11.7		27.5	11.3	38.8
Change Period, ($Y+R_c$), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (*MAH*), s		0.0		3.2		3.0	3.1	3.0
Queue Clearance Time (g_s), s				7.1		22.9	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	1.7	A	1.9	A	1.9	A

HCS 2010 Signalized Intersection Results Summary

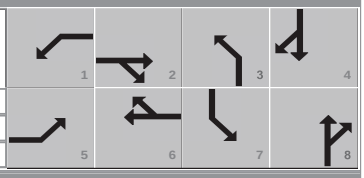
General Information				Intersection Information	
Agency	Kunzman Associates, Inc.			Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other
Jurisdiction	Riverside	Time Period	Morning Peak Hour	PHF	0.90
Intersection	Iowa Avenue/Center Street	Analysis Year	Existing Plus Project	Analysis Period	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
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.2	0.6	9.8	3.2	2.9	11.7	
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	



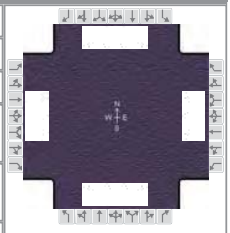
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	4.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	11.2	13.8	11.8	14.4	10.2	18.7	7.2	15.7
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Queue 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
Bicycle LOS Score / LOS	1.8	A	1.3	A	0.9	A	1.1	A

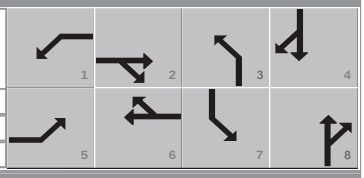
HCS 2010 Signalized Intersection Results Summary

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					EB		WB			NB		
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
Bicycle LOS Score / LOS	1.0	A	0.9	A	1.1	A	1.1	A

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*					

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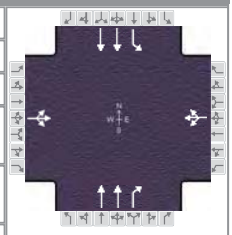
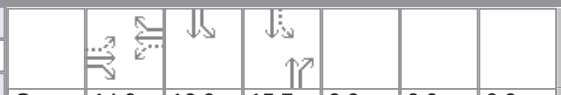
HCS 2010 Signalized Intersection Results Summary

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	0.95
Intersection	Main Street/Riverside Aven	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00
File Name	AMOYWO1I.xus				
Project Description	Center Street Warehouse - With Improvements				

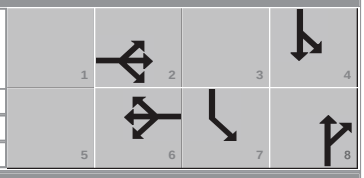


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	0	0	0	34	0	131		742	36	93	703	

Signal Information			
Cycle, s	52.3	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	14.0	10.6	15.7	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		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	1.3	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*					

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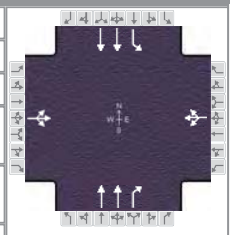
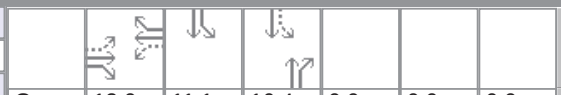
HCS 2010 Signalized Intersection Results Summary

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 Aven	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00
File Name	PMOYWO1I.xus				
Project Description	Center Street Warehouse - With Improvements				

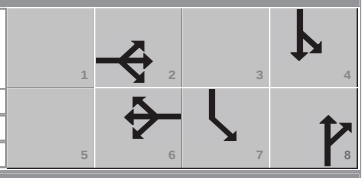


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	0	0	0	22	0	127		791	100	170	947	

Signal Information			
Cycle, s	51.5	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	12.0	11.1	16.4	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	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
Bicycle LOS Score / LOS	0.5	A	0.8	A	1.3	A	1.5	A

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*Orange Street/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) Without Project*

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*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*Orange Street/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) Without Project*

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*							

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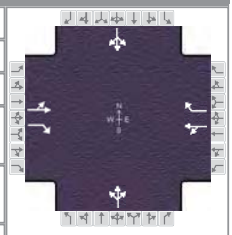
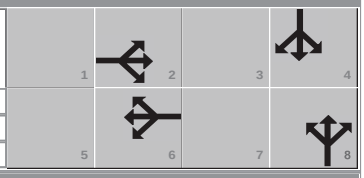
HCS 2010 Signalized Intersection Results Summary

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	0.91
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					EB		WB				NB			SB		
Cycle, s	52.1	Reference Phase	2		L	T	R	L	T	R						
Offset, s	0	Reference Point	End	Green	22.0	4.1	13.9	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						



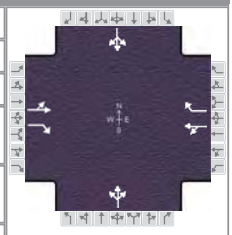
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		7.0		12.0		12.0
Phase Duration, s		26.0		26.0		17.9		8.1
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		3.2		3.2		3.3		3.1
Queue Clearance Time (g_s), s		4.3		20.3		6.6		2.6
Green 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

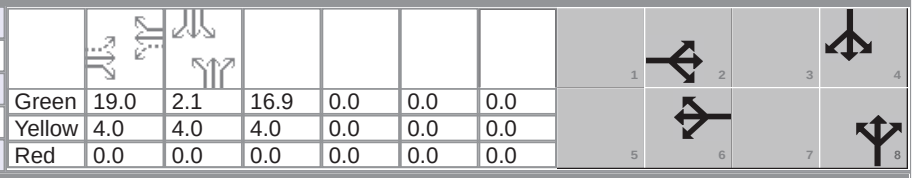
HCS 2010 Signalized Intersection Results Summary

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
Force Mode	Fixed	Simult. Gap N/S	On



Green	19.0	2.1	16.9	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		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

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*La Cadena/Stephens-I-215 SB*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) Without Project*

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*							

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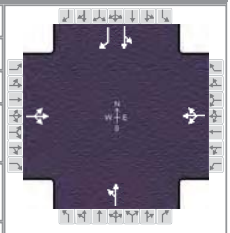
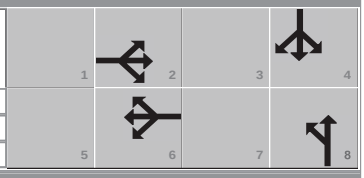
HCS 2010 Signalized Intersection Results Summary

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	0.95
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					EB		WB			NB		
Cycle, s	52.6	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	16.1	13.7	10.8	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		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
Bicycle LOS Score / LOS	1.1	A	1.0	A	0.7	A	0.9	A

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*La Cadena/Stephens-I-215 SB*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) Without Project*

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*							

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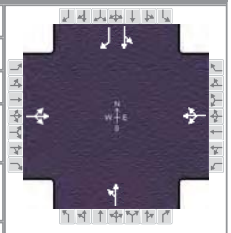
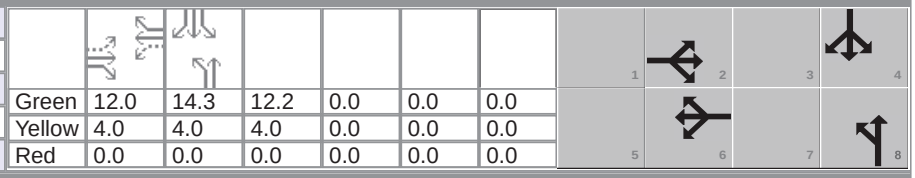
HCS 2010 Signalized Intersection Results Summary

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	0.96
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	
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		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
Bicycle LOS Score / LOS	1.0	A	0.8	A	0.8	A	1.3	A

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*La Cadena/Highgrove-I-215 NB*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) Without Project*

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*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*La Cadena/Highgrove-I-215 NB*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) Without Project*

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*							

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*Highgrove Place/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) Without Project*

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*		

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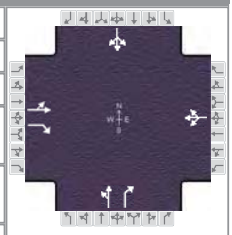
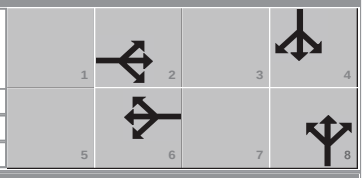
HCS 2010 Signalized Intersection Results Summary

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	0.91
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					EB			WB			NB			SB		
Cycle, s	50.9	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	20.0	3.3		15.6	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		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

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*Highgrove Place/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) Without Project*

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*	

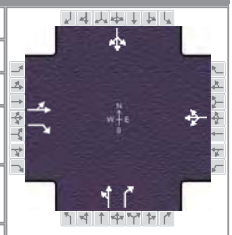
Delay, Queue Length, and Level of Service

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+™ Version 5.5 Generated: 1/20/2016 11:15 AM

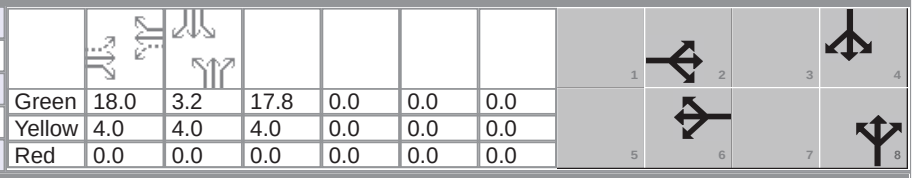
HCS 2010 Signalized Intersection Results Summary

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
Force Mode	Fixed	Simult. Gap N/S	On



Green	18.0	3.2	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

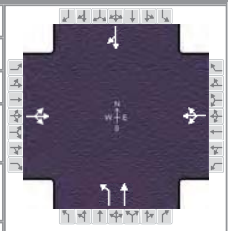
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		8.0		11.0		12.0
Phase Duration, s		22.0		22.0		21.8		7.2
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		3.1		3.1		3.3		3.3
Queue Clearance Time (g_s), s		8.0		7.9		8.4		2.8
Green 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	0.5	A

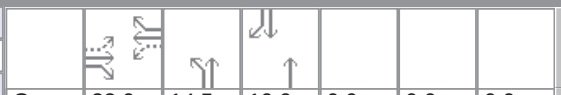
HCS 2010 Signalized Intersection Results Summary

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 Ran	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00
File Name	AMOYWO9.xus				
Project Description	Center Street Warehouse				

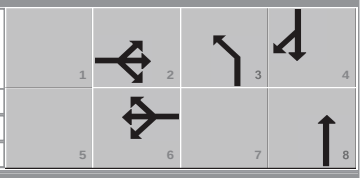


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	95	0	823	0	0	0	297	463			14	241

Signal Information			
Cycle, s	68.5	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	32.0	14.5	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



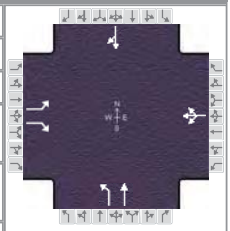
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		8.0		8.0	2.0	4.0		8.3
Phase Duration, s		36.0		36.0	18.5	32.5		14.0
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		3.3		0.0	3.1	3.1		3.1
Queue Clearance Time (g_s), s		34.0			14.0	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	0.5	A	1.9	A	1.9	A

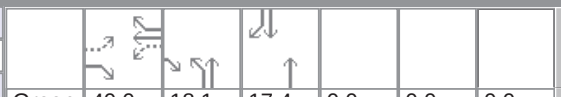
HCS 2010 Signalized Intersection Results Summary

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 Ran	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00
File Name	AMOYWO9I.xus				
Project Description	Center Street Warehouse				

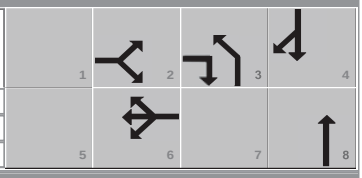


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	95		823	0	0	0	297	463			14	241

Signal Information			
Cycle, s	87.5	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	40.0	18.1	17.4	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



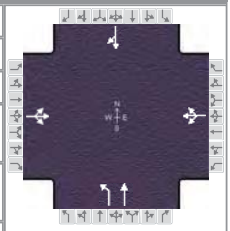
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		5.0		8.0	2.0	4.0		8.3
Phase Duration, s		44.0		44.0	22.1	43.5		21.4
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		3.3		0.0	3.1	3.1		3.1
Queue Clearance Time (g_s), s		40.6			17.5	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	D	
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
Bicycle LOS Score / LOS	1.5	F	0.5	A	1.9	A	1.0	A

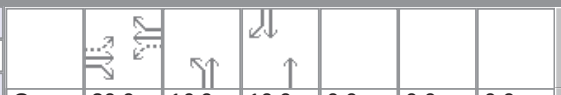
HCS 2010 Signalized Intersection Results Summary

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	Evening Peak Hour	PHF	0.88
Intersection	Iowa Avenue-I-215 NB Ran	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00
File Name	PMOYWO9.xus				
Project Description	Center Street Warehouse				

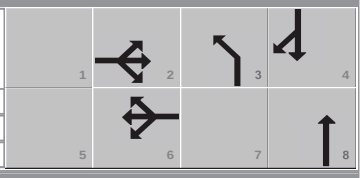


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	126	0	804	0	0	0	345	584			22	330

Signal Information			
Cycle, s	68.9	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	30.0	16.9	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



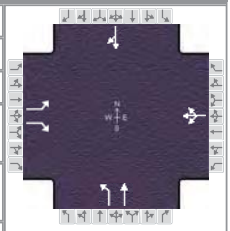
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		8.0		8.0	2.0	4.0		8.3
Phase Duration, s		34.0		34.0	20.9	34.9		14.0
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		3.3		0.0	3.1	3.1		3.1
Queue Clearance Time (g_s), s		32.0			16.4	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 Ran	Analysis Year	OY (2017) Without Project	Analysis Period	1> 7:00
File Name	PMOYWO9I.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					EB		WB			NB				SB			
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							

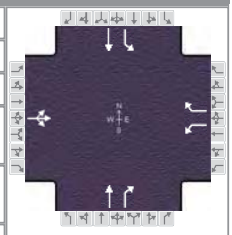
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		5.0		8.0		10.0		12.0
Phase Duration, s		19.0		19.0		34.4		25.7
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		3.3		0.0		3.1		3.3
Queue Clearance Time (g_s), s		17.0				28.1		20.8
Green 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	1.5	A	0.5	A	2.2	B	1.1	A

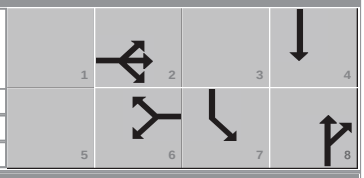
HCS 2010 Signalized Intersection Results Summary

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	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			



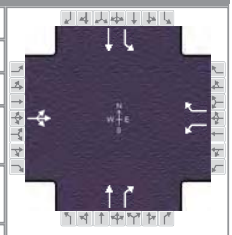
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		5.0		7.3	2.0	4.0
Phase Duration, s		17.5		17.5		21.2	13.8	35.0
Change Period, ($Y+R_c$), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (*MAH*), s		0.0		3.3		3.1	3.1	3.1
Queue Clearance Time (g_s), s				12.5		16.5	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
Bicycle LOS Score / LOS	0.5	A	1.7	B	1.6	A	2.2	B

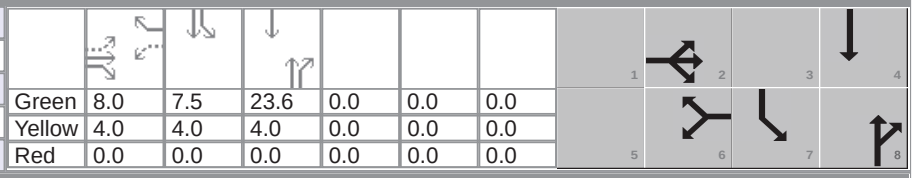
HCS 2010 Signalized Intersection Results Summary

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		

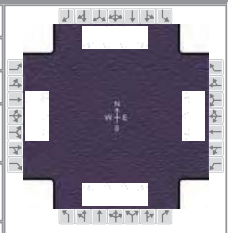
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		5.0		7.3	2.0	4.0
Phase Duration, s		12.0		12.0		27.6	11.5	39.0
Change Period, ($Y+R_c$), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (*MAH*), s		0.0		3.2		3.0	3.1	3.0
Queue Clearance Time (g_s), s				7.4		22.9	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	1.7	B	2.1	B	1.9	A

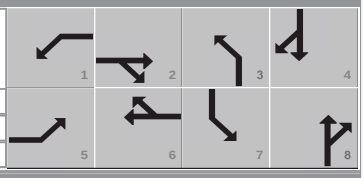
HCS 2010 Signalized Intersection Results Summary

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					EB		WB			NB		
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		



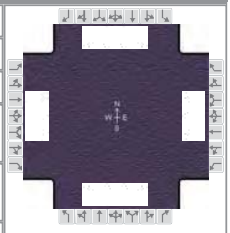
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	4.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	10.7	13.1	11.9	14.3	10.1	19.0	7.3	16.3
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Queue 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
Bicycle LOS Score / LOS	1.8	A	1.3	A	1.0	A	1.1	A

HCS 2010 Signalized Intersection Results Summary

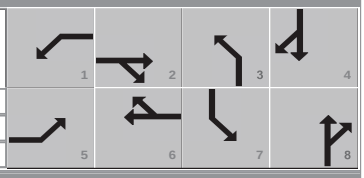
General Information				Intersection Information	
Agency	Kunzman Associates, Inc.			Duration, h	0.25
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other
Jurisdiction	Riverside	Time Period	Evening Peak Hour	PHF	0.97
Intersection	Iowa Avenue/Center Street	Analysis Year	OY (2017) Without Project	Analysis 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
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	6.8	0.7	8.0	3.9	1.9	14.7	
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	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
Bicycle LOS Score / LOS	0.9	A	0.9	A	1.2	A	1.1	A

Opening Year (2017) With Project

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*Main Street/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) With Project*

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*					

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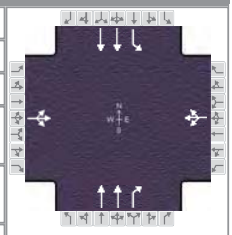
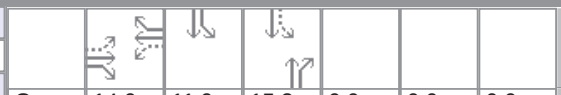
HCS 2010 Signalized Intersection Results Summary

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	0.95
Intersection	Main Street/Riverside Aven	Analysis Year	OY (2017) With Project	Analysis Period	1> 7:00
File Name	AMOYW1I.xus				
Project Description	Center Street Warehouse - With Improvements				

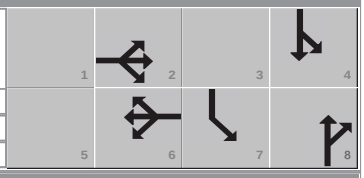


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	0	0	0	41	0	140		742	62	123	703	

Signal Information			
Cycle, s	53.3	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	14.0	11.9	15.3	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	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
Bicycle LOS Score / LOS	0.5	A	0.8	A	1.3	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*					

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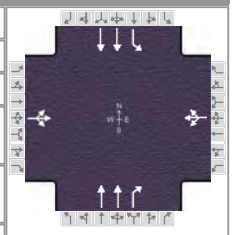
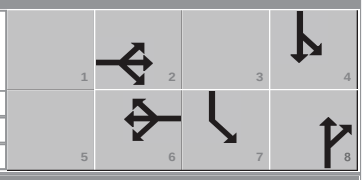
HCS 2010 Signalized Intersection Results Summary

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 Aven	Analysis Year	OY (2017) With Project	Analysis Period	1> 7:00
File Name	PMOYW1I.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					EB			WB			NB			SB		
Cycle, s	51.7	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	12.0	11.3		16.4	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		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
Bicycle LOS Score / LOS	0.5	A	0.8	A	1.3	A	1.5	A

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*Project West Acc/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) With Project*

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*				

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*Project West Acc/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) With Project*

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*				

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*Project East Acc/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) With Project*

Project Description *Center Street Warehouse*

East/West Street: *Center Street* | North/South Street: *Project EastAccess*

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*					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*Project East Acc/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) With Project*

Project Description *Center Street Warehouse*

East/West Street: *Center Street* | North/South Street: *Project EastAccess*

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*				

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*Orange Street/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) With Project*

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*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*Orange Street/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) With Project*

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*							

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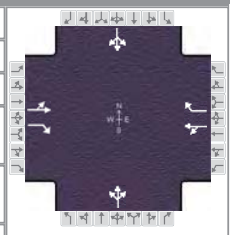
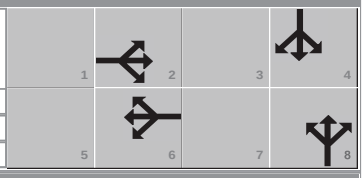
HCS 2010 Signalized Intersection Results Summary

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	0.91
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					EB		WB			NB		
Cycle, s	59.9	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	28.5	4.6	14.8	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		



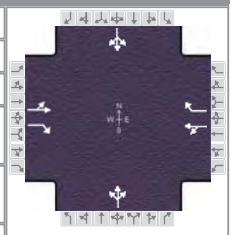
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		7.0		12.0		12.0
Phase Duration, s		32.5		32.5		18.8		8.6
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		3.2		3.2		3.2		3.1
Queue Clearance Time (g_s), s		5.0		26.5		10.2		2.7
Green 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
Bicycle LOS Score / LOS	0.9	A	1.6	A	0.9	A	0.5	A

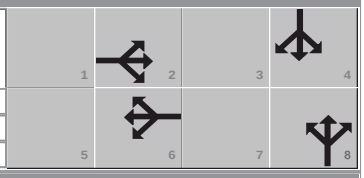
HCS 2010 Signalized Intersection Results Summary

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					EB		WB				NB			SB		
Cycle, s	51.0	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	19.0	2.2	17.8	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		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

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*La Cadena/Stephens-I-215 SB*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) With Project*

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*							

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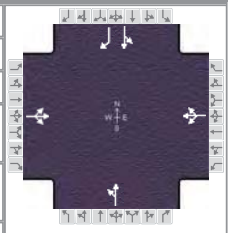
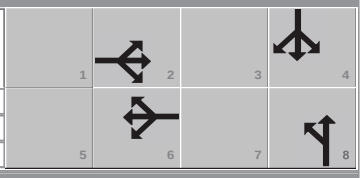
HCS 2010 Signalized Intersection Results Summary

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	0.95
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					EB		WB			NB		
Cycle, s	56.1	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On	Green	19.3	13.8	11.1	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		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
Bicycle LOS Score / LOS	1.2	A	1.1	A	0.7	A	0.9	A

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*La Cadena/Stephens-I-215 SB*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) With Project*

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*							

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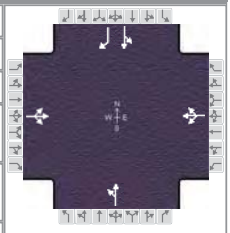
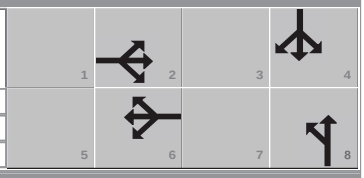
HCS 2010 Signalized Intersection Results Summary

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	0.96
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					EB			WB			NB			SB		
Cycle, s	54.0	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	14.5	15.2		12.3	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		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
Bicycle LOS Score / LOS	1.1	A	0.8	A	0.8	A	1.3	A

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*La Cadena/Highgrove-I-215 NB*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) With Project*

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*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*La Cadena/Highgrove-I-215 NB*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) With Project*

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*							

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Morning Peak Hour*

Site Information

Intersection	*Highgrove Place/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) With Project*

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*		

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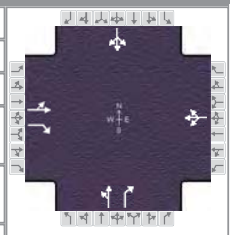
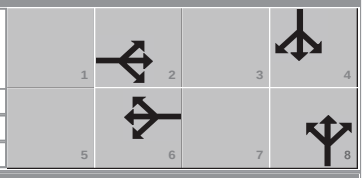
HCS 2010 Signalized Intersection Results Summary

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	0.91
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					EB		WB			NB		
Cycle, s	51.2	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	20.0	3.3	15.9	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		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

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*BC*
Agency/Co.	*Kunzman Associates, Inc.*
Date Performed	*1/18/2016*
Analysis Time Period	*Evening Peak Hour*

Site Information

Intersection	*Highgrove Place/Center Street*
Jurisdiction	*City of Riverside*
Analysis Year	*OY (2017) With Project*

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*		

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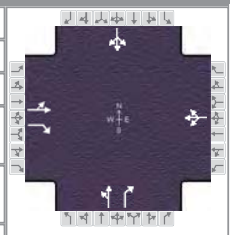
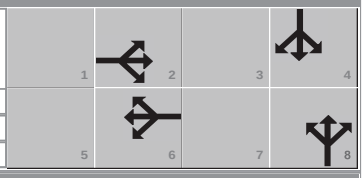
HCS 2010 Signalized Intersection Results Summary

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	0.91
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					EB			WB			NB			SB		
Cycle, s	51.1	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	18.0	3.2		17.9	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					



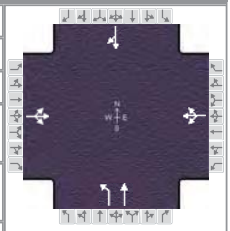
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		8.0		11.0		12.0
Phase Duration, s		22.0		22.0		21.9		7.2
Change Period, (*Y*+*Rc*), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		3.1		3.1		3.3		3.3
Queue Clearance Time (g_s), s		10.1		8.1		8.4		2.8
Green 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

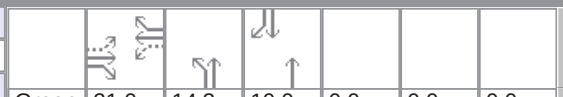
HCS 2010 Signalized Intersection Results Summary

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 Ran	Analysis Year	OY (2017) With Project	Analysis Period	1> 7:00
File Name	AMOYW9.xus				
Project Description	Center Street Warehouse				

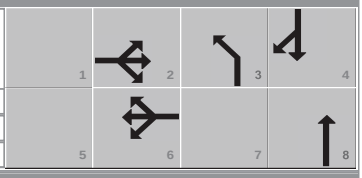


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	95	0	823	0	0	0	297	482			14	241

Signal Information			
Cycle, s	67.3	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	31.0	14.3	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



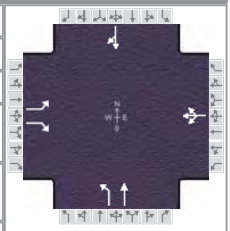
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		8.0		8.0	2.0	4.0		8.3
Phase Duration, s		35.0		35.0	18.3	32.3		14.0
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		3.3		0.0	3.1	3.1		3.1
Queue Clearance Time (g_s), s		33.0			13.8	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	0.5	A	1.9	A	1.9	A

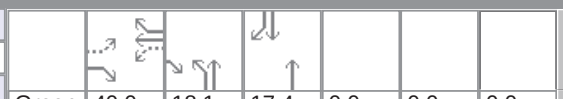
HCS 2010 Signalized Intersection Results Summary

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 Ran	Analysis Year	OY (2017) With Project	Analysis Period	1> 7:00
File Name	AMOYW9I.xus				
Project Description	Center Street Warehouse				

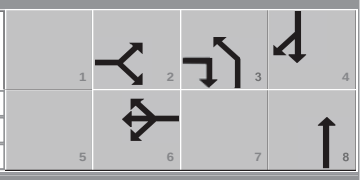


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	95		823	0	0	0	297	482			14	241

Signal Information			
Cycle, s	87.5	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	40.0	18.1	17.4	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



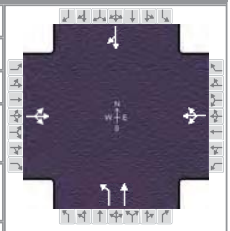
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		5.0		8.0	2.0	4.0		8.3
Phase Duration, s		44.0		44.0	22.1	43.5		21.4
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		3.3		0.0	3.1	3.1		3.1
Queue Clearance Time (g_s), s		40.6			17.5	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	D	
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
Bicycle LOS Score / LOS	1.5	F	0.5	A	1.9	A	1.9	A

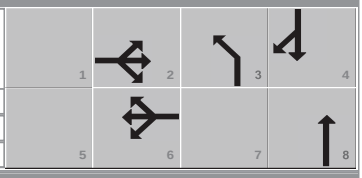
HCS 2010 Signalized Intersection Results Summary

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 Ran	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									
Uncoordinated	Yes	Simult. Gap E/W	On	Green	26.2	15.9	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		



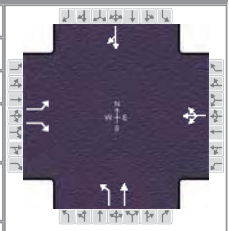
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		8.0		8.0	2.0	4.0		8.3
Phase Duration, s		30.2		30.2	19.9	33.9		14.0
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		3.3		0.0	3.1	3.1		3.1
Queue Clearance Time (g_s), s		28.2			15.3	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	0.5	A	2.3	B	1.1	A

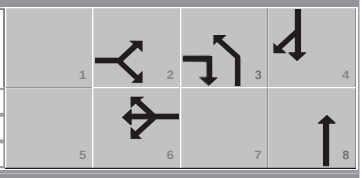
HCS 2010 Signalized Intersection Results Summary

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 Ran	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					EB		WB			NB				SB			
Cycle, s	94.6	Reference Phase	2														
Offset, s	0	Reference Point	End														
Uncoordinated	Yes	Simult. Gap E/W	On	Green	18.2	25.5	39.0	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							



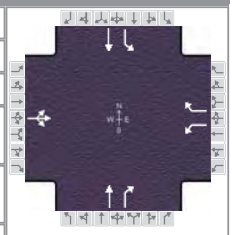
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		5.0		8.0		10.0		12.0
Phase Duration, s		22.2		22.2		43.0		29.5
Change Period, ($Y+R_c$), s		4.0		4.0		4.0		4.0
Max Allow Headway (*MAH*), s		3.3		0.0		3.1		3.3
Queue Clearance Time (g_s), s		20.2				36.5		24.6
Green 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	1.5	F	0.5	A	2.3	B	1.1	A

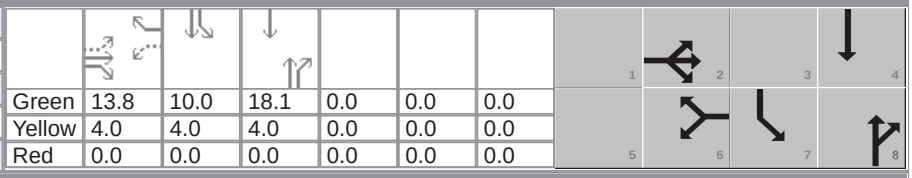
HCS 2010 Signalized Intersection Results Summary

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	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
Force Mode	Fixed	Simult. Gap N/S	On



Green	13.8	10.0	18.1	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

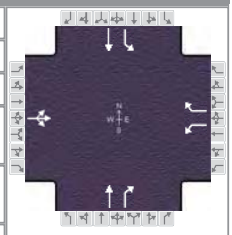
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		5.0		7.3	2.0	4.0
Phase Duration, s		17.8		17.8		22.1	14.0	36.1
Change Period, ($Y+R_c$), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (*MAH*), s		0.0		3.3		3.1	3.1	3.1
Queue Clearance Time (g_s), s				12.8		17.6	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
Bicycle LOS Score / LOS	0.5	A	1.7	B	1.6	A	2.2	B

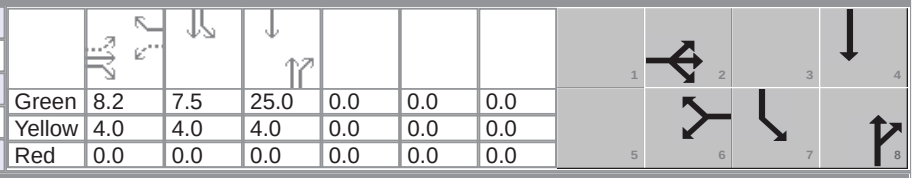
HCS 2010 Signalized Intersection Results Summary

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
Force Mode	Fixed	Simult. Gap N/S	On



Green	8.2	7.5	25.0	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		

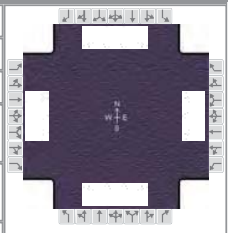
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8	7	4
Case Number		8.0		5.0		7.3	2.0	4.0
Phase Duration, s		12.2		12.2		29.0	11.5	40.5
Change Period, ($Y+R_c$), s		4.0		4.0		4.0	4.0	4.0
Max Allow Headway (*MAH*), s		0.0		3.2		3.0	3.1	3.0
Queue Clearance Time (g_s), s				7.6		25.9	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	1.7	A	2.3	B	1.9	A

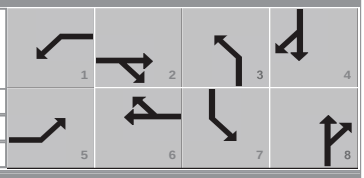
HCS 2010 Signalized Intersection Results Summary

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) 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					EB			WB			NB			SB		
Cycle, s	53.1	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	7.4	0.6		10.3	3.4	3.0	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					



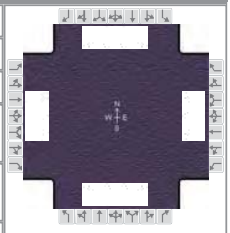
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	4.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	11.4	14.3	12.0	14.9	10.5	19.4	7.4	16.3
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Queue 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
Bicycle LOS Score / LOS	0.8	A	1.3	A	1.0	A	1.1	A

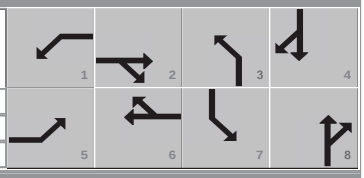
HCS 2010 Signalized Intersection Results Summary

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	Green	6.9	2.2	8.0	4.0	2.0	15.2		
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	13.0	14.2	10.9	12.0	10.0	21.2	8.0	19.2
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	8.9	6.9	5.6	5.1	4.6	10.5	3.3	11.2
Green Extension Time (g_e), 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 (g_s), 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 (g_c), 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 (c_a), 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 (d_1), 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 (d_2), 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 (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	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
Bicycle LOS Score / LOS	1.0	A	0.9	A	1.2	A	1.1	A

APPENDIX E

Traffic Signal Warrant Worksheets

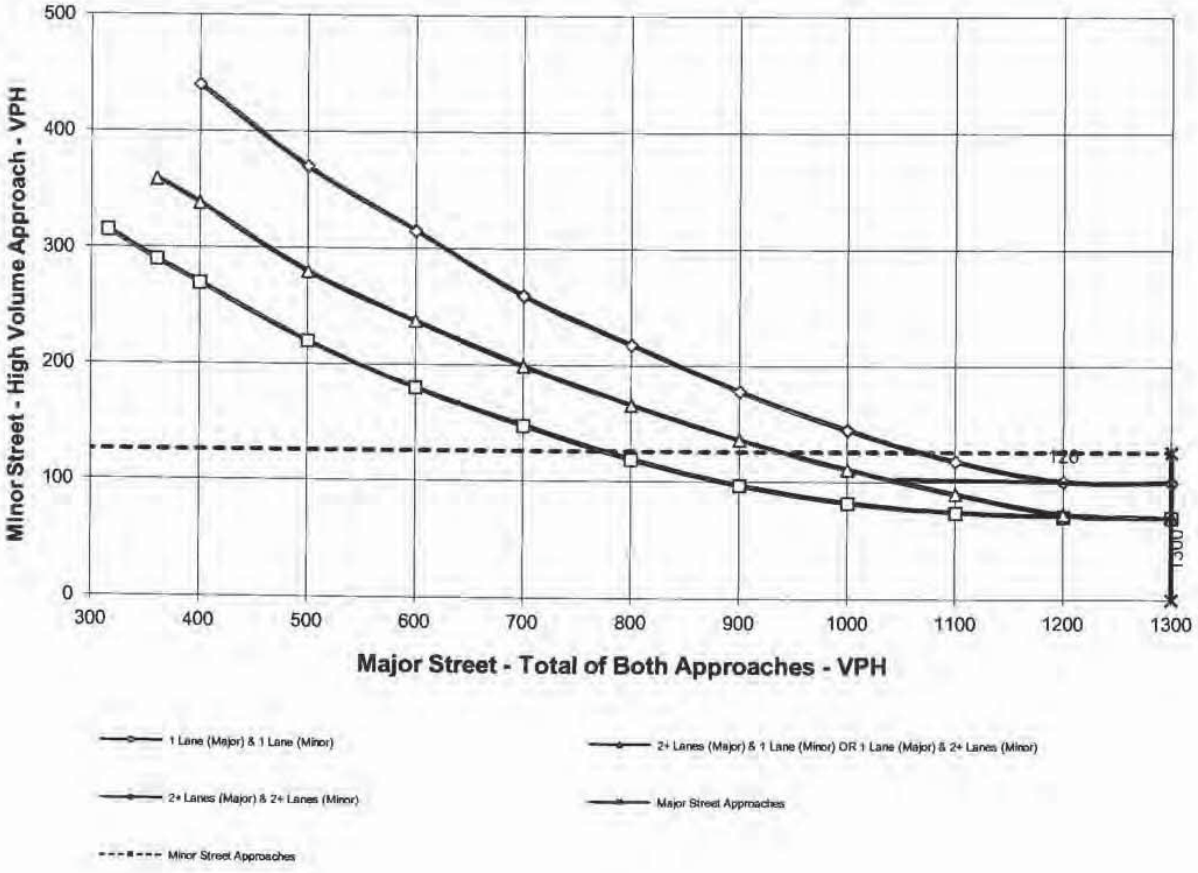
PEAK HOUR VOLUME WARRANT
(Rural Areas)

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.

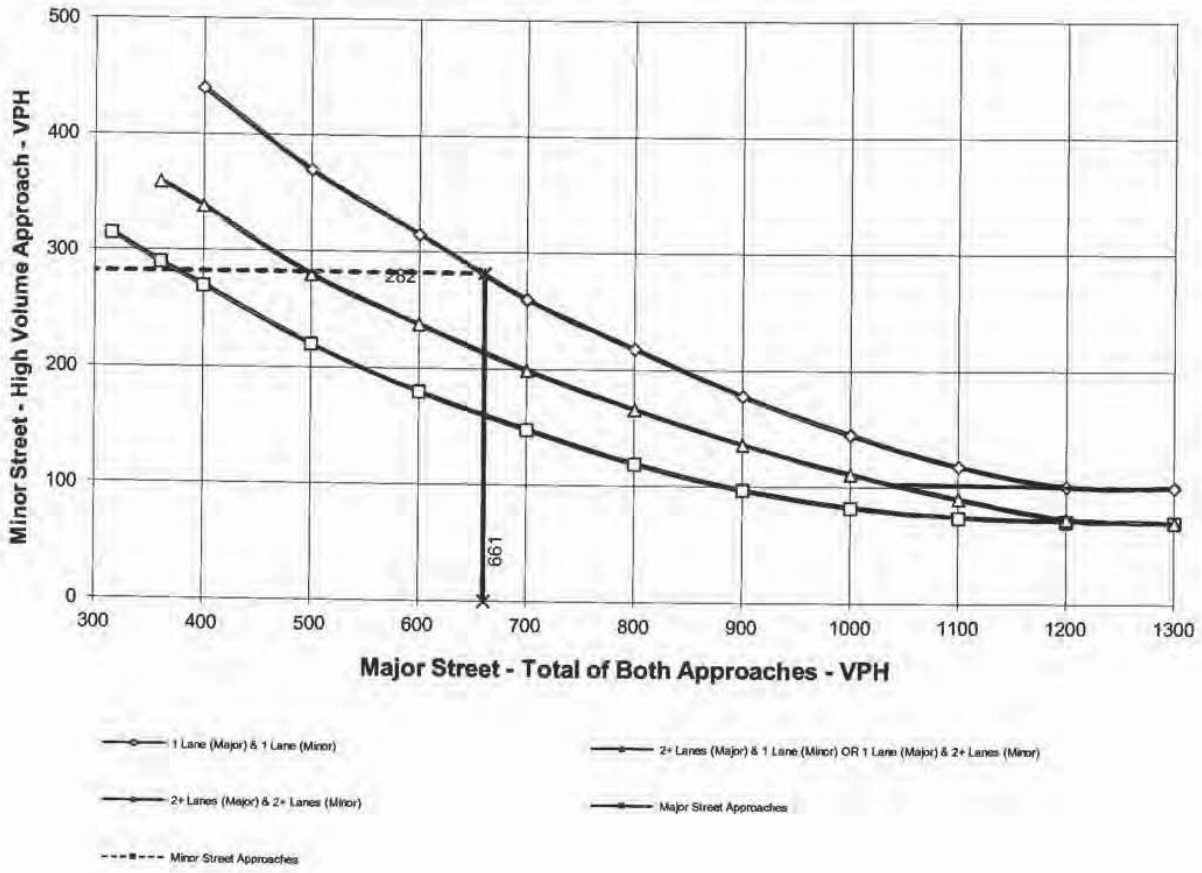
PEAK HOUR VOLUME WARRANT
(Rural Areas)

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** High Volume Approach (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**

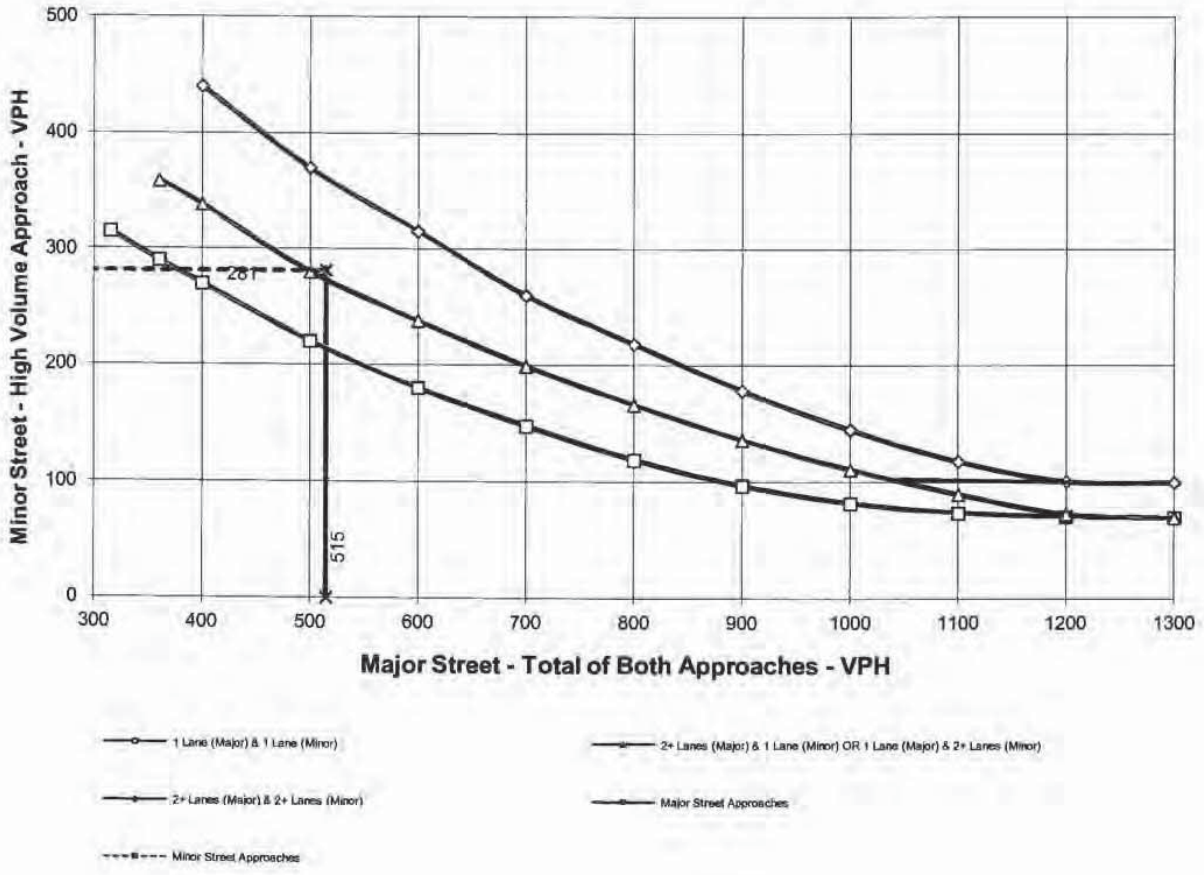
Number of Approach Lanes Major Street = **1**

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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(714) 973-8383

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