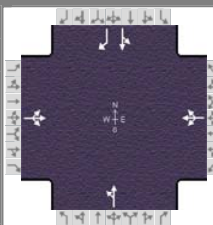


HCS 2010 Signalized Intersection Results Summary

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	AMOYW61.xus				
Project Description	Center Street Warehouse - With Improvements				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	43	292	60	180	167	9	32	63		44	177	42

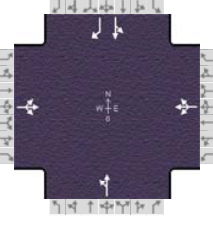
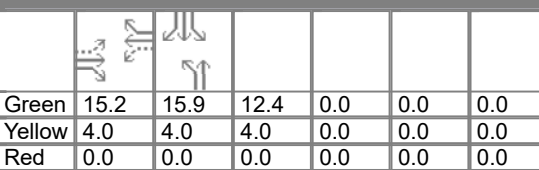
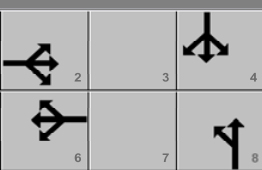
Signal Information														
Cycle, s	57.1	Reference Phase	2											
Offset, s	0	Reference Point	End											
Uncoordinated	Yes	Simult. Gap E/W	On	Green	20.2	13.8	11.1	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0				
				Red	0.0	0.0	0.0	0.0	0.0	0.0				

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		24.2		24.2		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		13.3		18.6		4.7		8.3
Green Extension Time (g _e), s		1.8		1.6		0.1		0.5
Phase Call Probability		1.00		1.00		0.80		0.99
Max Out Probability		0.01		0.05		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
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		1750			1223			1814			1826	1563
Queue Service Time (g _s), s		0.0			5.3			2.7			6.3	1.3
Cycle Queue Clearance Time (g _c), s		11.3			16.6			2.7			6.3	1.3
Green Ratio (g/C)		0.35			0.35			0.19			0.24	0.24
Capacity (c), veh/h		687			527			354			442	378
Volume-to-Capacity Ratio (X)		0.605			0.712			0.283			0.526	0.117
Available Capacity (c _a), veh/h		979			748			953			959	821
Back of Queue (Q), veh/ln (50th percentile)		3.9			4.0			1.0			2.4	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			17.2			19.6			18.8	16.9
Incremental Delay (d ₂), s/veh		0.3			0.7			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		15.9			17.9			19.7			19.2	16.9
Level of Service (LOS)		B			B			B			B	B
Approach Delay, s/veh / LOS	15.9	B		17.9	B		19.7	B		18.8	B	
Intersection Delay, s/veh / LOS	17.6						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

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	PMOYW61.xus																													
Project Description	Center Street Warehouse - With Improvements																													
Demand Information														EB			WB			NB										
Approach Movement														L	T	R	L	T	R	L	T	R	L	T	R					
Demand (v), veh/h														64	248	66	87	97	5	31	158		68	366	52					
Signal Information																														
Cycle, s	55.5	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	15.2	15.9	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																			
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																			
Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																			
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT																			
Assigned Phase					2		6		8		4																			
Case Number					8.0		8.0		12.0		11.0																			
Phase Duration, s					19.2		19.2		16.4		19.9																			
Change Period, (Y+R _c), s					4.0		4.0		4.0		4.0																			
Max Allow Headway (MAH), s					3.2		3.2		3.0		3.1																			
Queue Clearance Time (g _s), s					14.0		8.7		7.2		15.0																			
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				1707			1298			1830			1830 1563																	
Queue Service Time (g _s), s				5.3			0.0			5.2			13.0 1.4																	
Cycle Queue Clearance Time (g _c), s				12.0			6.7			5.2			13.0 1.4																	
Green Ratio (g/C)				0.27			0.27			0.22			0.29 0.29																	
Capacity (c), veh/h				543			450			408			525 449																	
Volume-to-Capacity Ratio (X)				0.725			0.437			0.482			0.861 0.121																	
Available Capacity (c _a), veh/h				987			811			989			989 845																	
Back of Queue (Q), veh/ln (50th percentile)				4.2			1.9			2.0			5.0 0.4																	
Queue Storage Ratio (RQ) (50th percentile)				0.00			0.00			0.00			0.00 0.00																	
Uniform Delay (d ₁), s/veh				18.9			16.7			18.8			18.7 14.6																	
Incremental Delay (d ₂), s/veh				0.7			0.2			0.3			1.7 0.0																	
Initial Queue Delay (d ₃), s/veh				0.0			0.0			0.0			0.0 0.0																	
Control Delay (d), s/veh				19.6			17.0			19.1			20.4 14.7																	
Level of Service (LOS)				B			B			B			C B																	
Approach Delay, s/veh / LOS				19.6	B		17.0	B		19.1	B		19.8	B																
Intersection Delay, s/veh / LOS				19.2						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					Site Information				
Analyst	BC				Intersection	La Cadena/Highgrove-I-215 NB			
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside			
Date Performed	1/18/2016				Analysis Year	OY (2017) With Project			
Analysis Time Period	Morning Peak Hour								
Project ID Center Street Warehouse									
East/West Street: Highgrove Place/I-215 FWY NB					North/South Street: La Cadena Drive				
Volume Adjustments and Site Characteristics									
Approach	Eastbound					Westbound			
Movement	L	T	R	L	T	R	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	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	3		3	3	3		3		
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	0.1		0.6	-0.6	-0.3		0.1		
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)	4.58		5.80	4.59	4.68		4.99		
x, final value	0.44		0.05	0.01	0.11		0.12		
Move-up time, m (s)	2.0		2.3		2.0		2.0		
Service Time, t _s (s)	2.6		3.5	2.3	2.7		3.0		
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)	11.12		8.83	7.32	8.23		8.70		
LOS	B		A	A	A		A		
Approach: Delay (s/veh)	11.12		8.67		8.23		8.70		
LOS	B		A		A		A		
Intersection Delay (s/veh)	10.14								
Intersection LOS	B								

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	BC				Intersection	La Cadena/Highgrove-I-215 NB			
Agency/Co.	Kunzman Associates, Inc.				Jurisdiction	City of Riverside			
Date Performed	1/18/2016				Analysis Year	OY (2017) With Project			
Analysis Time Period	Evening Peak Hour								
Project ID Center Street Warehouse									
East/West Street: Highgrove Place/I-215 FWY NB					North/South Street: La Cadena Drive				
Volume Adjustments and Site Characteristics									
Approach	Eastbound					Westbound			
Movement	L	T	R	L	T	R			
Volume (veh/h)	27	264	0	20	0	3			
%Thrus Left Lane									
Approach	Northbound					Southbound			
Movement	L	T	R	L	T	R			
Volume (veh/h)	0	98	68	1	159	0			
%Thrus Left Lane									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LT		L	R	TR		LT		
PHF	0.91		0.91	0.91	0.91		0.91		
Flow Rate (veh/h)	319		21	3	181		175		
% Heavy Vehicles	3		3	3	3		3		
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	0.1		0.6	-0.6	-0.2		0.1		
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)	5.04		6.39	5.17	4.88		5.12		
x, final value	0.45		0.04	0.00	0.25		0.25		
Move-up time, m (s)	2.0		2.3		2.0		2.0		
Service Time, t _s (s)	3.0		4.1	2.9	2.9		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)	12.05		9.33	7.89	9.45		9.81		
LOS	B		A	A	A		A		
Approach: Delay (s/veh)	12.05		9.15		9.45		9.81		
LOS	B		A		A		A		
Intersection Delay (s/veh)	10.72								
Intersection LOS	B								

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information											
Agency	Kunzman Associates, Inc.			Duration, h	0.25										
Analyst	BC	Analysis Date	1/18/2016	Area Type	Other										
Jurisdiction	Riverside	Time Period	Morning Peak Hour	PHF	0.90										
Intersection	Iowa Avenue-I-215 NB Ramp	Analysis Year	OY (2017) With Project	Analysis Period	1> 7:00										
File Name	AMOYW9I.xus														
Project Description	Center Street Warehouse														
Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				95		823	0	0	0	297	482			14	241
Signal Information															
Cycle, s	88.9	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	40.0	18.8	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	3	8		4				
Case Number					5.0		8.0	2.0	4.0		8.3				
Phase Duration, s					44.0		44.0	22.8	44.9		22.1				
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					42.0			18.2	21.6		17.5				
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	0.02		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				1757		1563			0	1757	1845			1576	
Queue Service Time (g _s), s				3.1		40.0			0.0	16.2	19.6			15.5	
Cycle Queue Clearance Time (g _c), s				3.1		40.0			0.0	16.2	19.6			15.5	
Green Ratio (g/C)				0.45		0.66				0.21	0.46			0.20	
Capacity (c), veh/h				871		1034				372	849			321	
Volume-to-Capacity Ratio (X)				0.121		0.884			0.000	0.887	0.631			0.883	
Available Capacity (c _a), veh/h				871		1034				790	849			709	
Back of Queue (Q), veh/ln (50th percentile)				1.2		14.1			0.0	6.9	8.0			6.0	
Queue Storage Ratio (RQ) (50th percentile)				0.00		0.00			0.00	0.00				0.00	
Uniform Delay (d _i), s/veh				14.3		12.3				34.0	18.3			34.4	
Incremental Delay (d ₂), s/veh				0.0		8.9			0.0	2.9	1.2			3.2	
Initial Queue Delay (d ₃), s/veh				0.0		0.0			0.0	0.0				0.0	
Control Delay (d), s/veh				14.3		21.2				36.9	19.4			37.6	
Level of Service (LOS)				B		C				D	B			D	
Approach Delay, s/veh / LOS				20.5		C	0.0			26.1	C		37.6	D	
Intersection Delay, s/veh / LOS				25.0						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						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 Ramp	Analysis Year	OY (2017) With Project	Analysis Period	1> 7:00															
File Name	PMOYW9I.xus																			
Project Description	Center Street Warehouse - With Improvements																			
Demand Information				EB			WB			NB			SB							
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R					
Demand (v), veh/h				126		804	0	0	0	345	640			22	330					
Signal Information																				
Cycle, s	90.5	Reference Phase	2	Green	15.0	25.1	38.4	0.0	0.0	0.0										
Offset, s	0	Reference Point	End	Yellow	4.0	4.0	4.0	0.0	0.0	0.0										
Uncoordinated	Yes	Simult. Gap E/W	On	Red	0.0	0.0	0.0	0.0	0.0	0.0										
Force Mode	Fixed	Simult. Gap N/S	On																	
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT									
Assigned Phase					2		6		8			4								
Case Number					5.0		8.0		10.0			12.0								
Phase Duration, s					19.0		19.0		42.4			29.1								
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				35.9			24.2								
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				1757		1563			0	1757	1845			1578						
Queue Service Time (g _s), s				6.7		15.0			0.0	15.0	33.9			22.2						
Cycle Queue Clearance Time (g _c), s				6.7		15.0			0.0	15.0	33.9			22.2						
Green Ratio (g/C)				0.17		0.59				0.42	0.42			0.28						
Capacity (c), veh/h				370		922				746	783			438						
Volume-to-Capacity Ratio (X)				0.387		0.991			0.000	0.526	0.929			0.913						
Available Capacity (c _a), veh/h				370		922				1358	1426			697						
Back of Queue (Q), veh/ln (50th percentile)				2.8		22.8			0.0	5.8	14.3			9.0						
Queue Storage Ratio (RQ) (50th percentile)				0.00		0.00			0.00	0.00				0.00						
Uniform Delay (d ₁), s/veh				34.3		18.3				19.3	24.8			31.7						
Incremental Delay (d ₂), s/veh				0.2		27.2			0.0	0.2	2.7			7.8						
Initial Queue Delay (d ₃), s/veh				0.0		0.0			0.0	0.0				0.0						
Control Delay (d), s/veh				34.6		45.5				19.5	27.5			39.5						
Level of Service (LOS)				C		D				B	C			D						
Approach Delay, s/veh / LOS				44.0		D		0.0		24.7		C		39.5	D					
Intersection Delay, s/veh / LOS				34.9						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						F			0.5		A			2.3		B		1.1		A