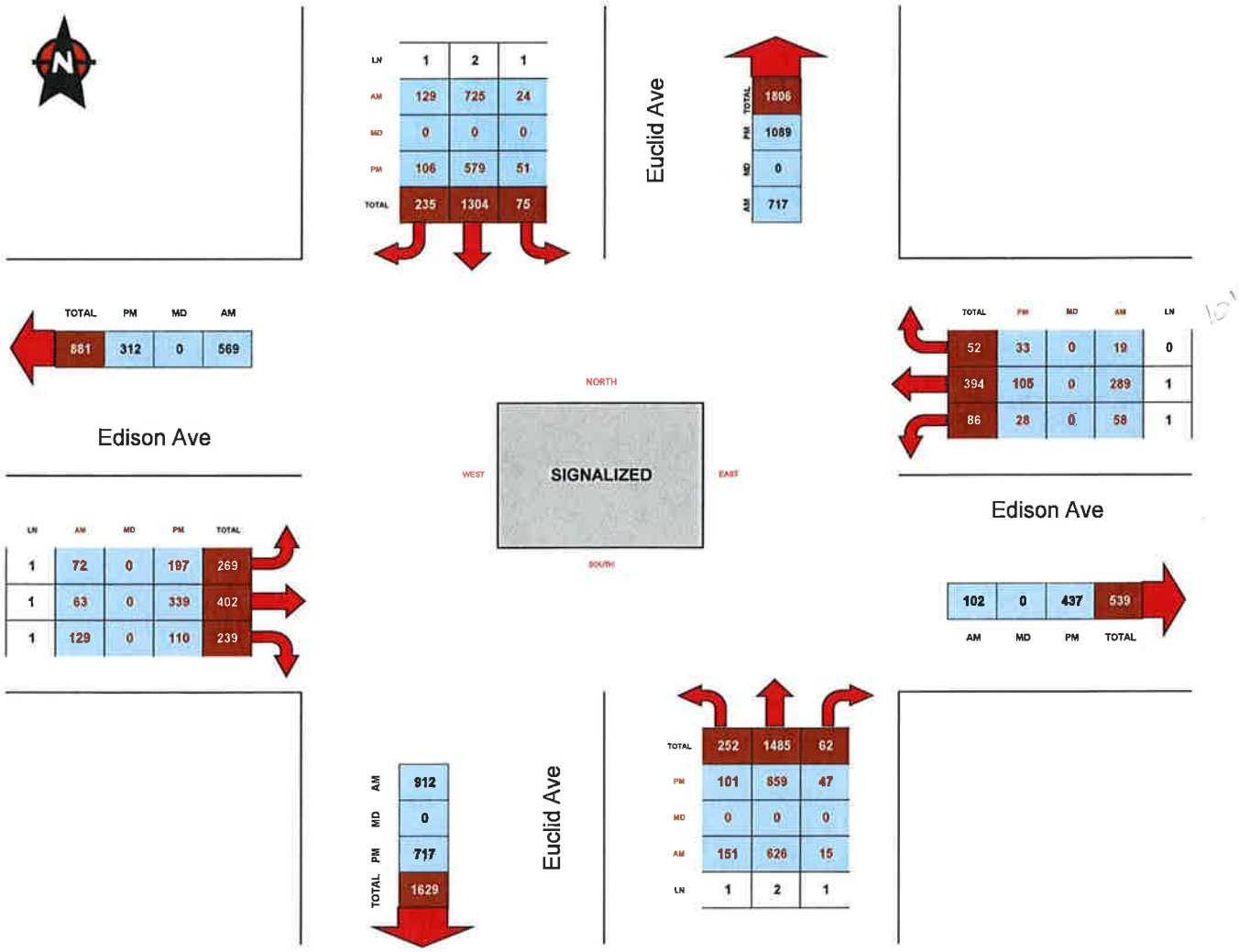
PEAK HOUR ITM SUMMARY

#009 Euclid Ave & Edison Ave

LOCATION#:	009	QTD PROJ#:	100142	AM PEAK:	715 AM
NORTH / SOUTH:	Euclid Ave	DATE:	Thursday, June 03, 2010	MD PEAK:	
EAST / WEST:	Edison Ave	VICINITY:	City of Chino	PM PEAK:	500 PM



AM COUNT	7:00 AM	TO	9:00 AM	MD COUNT	-	TO	-	PM COUNT	4:00 PM TO 6:00 PM

QUALITY TRAFFIC DATA, LLC
9701 W Pico Blvd, Suite 205, Los Angeles, CA 90035
Phone: 310-341-0019 Fax: 310-807-9247 Info@QualityTrafficData.com

VEHICLE TURNING MOVEMENT COUNT

#009 Euclid Ave & Edison Ave - AM PEAK

LOCATION#:	009	QTD PROJ#:	100142
NORTH / SOUTH:	Euclid Ave	DATE:	Thursday, June 03, 2010
EAST / WEST:	Edison Ave	VICINITY:	City of Chino

DIRECTION:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTALS
LANES:	1	2	1	1	2	1	1	1	1	1	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	35	149	5	3	171	32	12	9	28	14	80	7	545
7:15 AM	29	156	2	6	179	33	15	13	34	16	81	4	568
7:30 AM	37	161	5	7	187	25	14	19	27	13	77	6	578
7:45 AM	40	159	3	4	183	31	20	16	36	17	69	4	582
8:00 AM	45	150	5	7	176	40	23	15	32	12	62	5	572
8:15 AM	37	157	4	8	165	34	27	16	27	10	65	7	557
8:30 AM	41	148	6	4	162	39	25	20	24	15	58	6	548
8:45 AM	35	139	7	2	158	46	31	16	21	13	53	4	525
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													

VOLUME STATS:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
TOTAL:	299	1219	37	41	1381	280	167	124	229	110	545	43	4475
P.H.V: (1)	151	626	15	24	725	129	72	63	129	58	289	19	2300
P.H.F: (2)		0.975			0.984			0.917			0.906		0.988

(1) Peak Hour Volume (Peak Hour Begins At 715 AM)
(2) Peak Hour Factor (directional aggregate)

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VEHICLE TURNING MOVEMENT COUNT

#009 Euclid Ave & Edison Ave - PM PEAK

LOCATION#:	009	QTD PROJ#:	100142
NORTH / SOUTH:	Euclid Ave	DATE:	Thursday, June 03, 2010
EAST / WEST:	Edison Ave	VICINITY:	City of Chino

DIRECTION:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTALS
LANES:	1	2	1	1	2	1	1	1	1	1	1	0	
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	16	198	10	14	107	24	47	87	34	6	28	9	580
4:15 PM	20	209	8	13	109	27	50	80	31	5	36	7	595
4:30 PM	15	201	12	17	116	23	43	77	34	4	31	8	581
4:45 PM	22	195	14	14	124	24	47	85	29	7	24	6	591
5:00 PM	25	208	16	15	131	31	51	93	30	9	21	10	640
5:15 PM	30	213	12	12	140	29	49	85	26	6	26	9	637
5:30 PM	22	222	9	14	148	25	51	82	24	8	27	8	640
5:45 PM	24	216	10	10	160	21	46	79	30	5	31	6	638
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

VOLUME STATS:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
TOTAL:	174	1662	91	109	1035	204	384	668	238	50	224	63	4902
P.H.V: (1)	101	859	47	51	579	106	197	339	110	28	105	33	2555
P.H.F: (2)		0.987			0.963			0.928			0.965		0.998

(1) Peak Hour Volume (Peak Hour Begins At 500 PM)
(2) Peak Hour Factor (directional aggregate)

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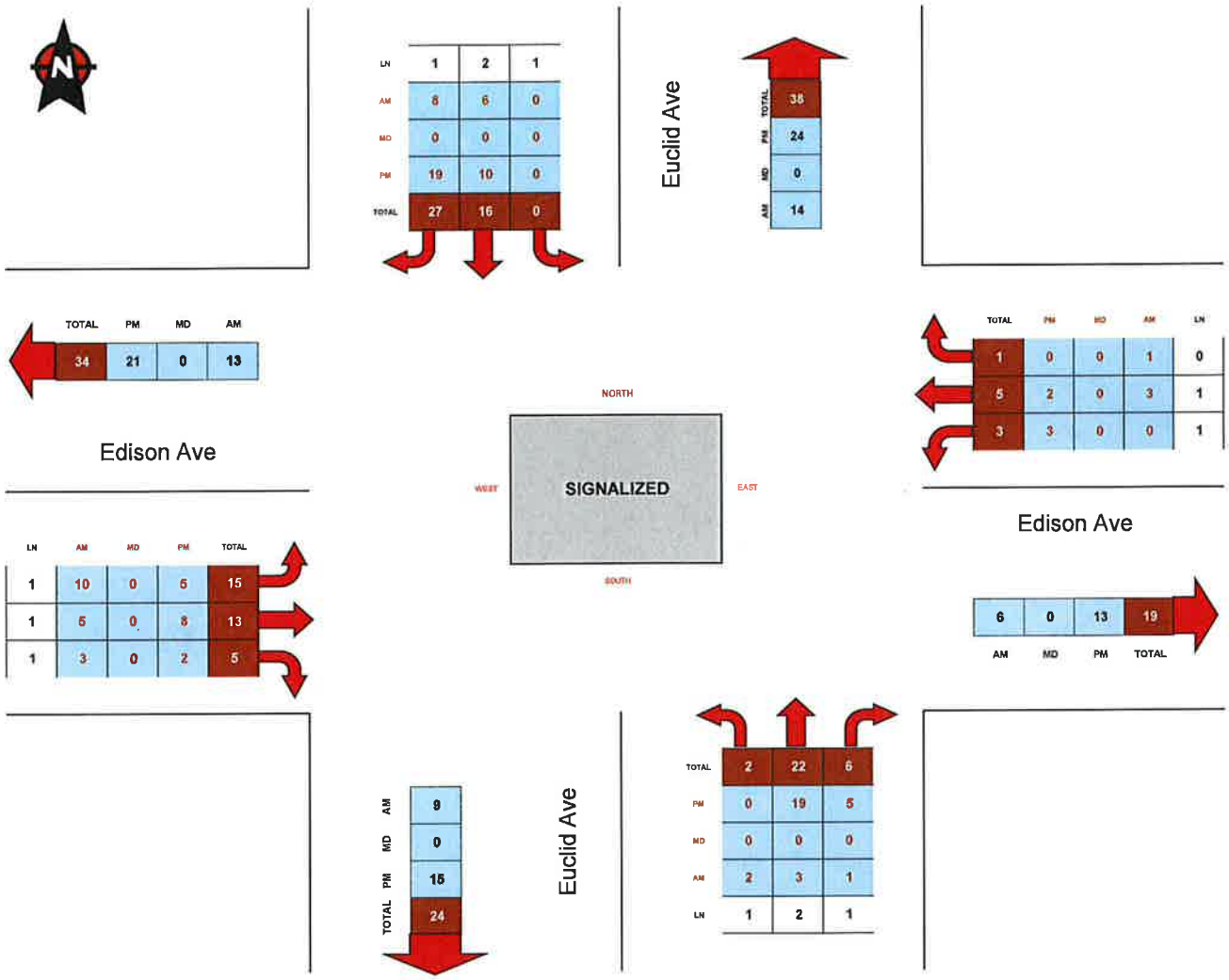
PEAK HOUR ITM SUMMARY

#009 Euclid Ave & Edison Ave

LOCATION#:	009	QTD PROJ#:	100142	AM PEAK:	715 AM
NORTH / SOUTH:	Euclid Ave	DATE:	Thursday, June 03, 2010	MD PEAK:	
EAST / WEST:	Edison Ave	VICINITY:	City of Chino	PM PEAK:	415 PM



AM COUNT	7:00 AM	TO	9:00 AM	MD COUNT	-	TO	-	PM COUNT	4:00 PM TO 6:00 PM

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VEHICLE TURNING MOVEMENT COUNT

#009 Euclid Ave & Edison Ave - AM PEAK

LOCATION#:	009	QTD PROJ#:	100142
NORTH / SOUTH:	Euclid Ave	DATE:	Thursday, June 03, 2010
EAST / WEST:	Edison Ave	VICINITY:	City of Chino

DIRECTION:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTALS
LANES:	1	2	1	1	2	1	1	1	1	1	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	1	0	0	0	2	0	1	0	0	1	0	5
7:15 AM	2	1	0	0	3	2	4	0	1	0	0	0	13
7:30 AM	0	2	0	0	2	4	1	1	0	0	0	1	11
7:45 AM	0	0	1	0	1	0	4	2	2	0	3	0	13
8:00 AM	0	0	0	0	0	2	1	2	0	0	0	0	5
8:15 AM	1	0	0	1	2	0	2	0	0	0	2	0	8
8:30 AM	1	2	0	0	0	1	1	0	0	0	0	0	5
8:45 AM	0	0	0	0	0	1	0	0	1	0	0	0	2
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													

VOLUME STATS:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
TOTAL:	4	6	1	1	8	12	13	6	4	0	6	1	62
P.H.V: (1)	2	3	1	0	6	8	10	5	3	0	3	1	42
P.H.F: (2)		0.500			0.583			0.563			0.333		0.808

(1) Peak Hour Volume (Peak Hour Begins At 715 AM)
(2) Peak Hour Factor (directional aggregate)

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VEHICLE TURNING MOVEMENT COUNT

#009 Euclid Ave & Edison Ave - PM PEAK

LOCATION#:	009	QTD PROJ#:	100142
NORTH / SOUTH:	Euclid Ave	DATE:	Thursday, June 03, 2010
EAST / WEST:	Edison Ave	VICINITY:	City of Chino

DIRECTION:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTALS
LANES:	1	2	1	1	2	1	1	1	1	1	1	0	
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	1	2	1	0	3	2	2	0	0	1	0	0	12
4:15 PM	0	4	0	0	5	5	2	2	0	1	2	0	21
4:30 PM	0	4	1	0	1	2	2	2	1	1	0	0	14
4:45 PM	0	9	2	0	3	2	1	2	1	0	0	0	20
5:00 PM	0	2	2	0	1	10	0	2	0	1	0	0	18
5:15 PM	0	3	0	0	3	3	5	1	0	0	0	0	15
5:30 PM	1	0	1	0	0	4	1	0	1	0	0	0	8
5:45 PM	1	4	1	0	4	3	0	0	1	0	0	0	14
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

VOLUME STATS:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
TOTAL:	3	28	8	0	20	31	13	9	4	4	2	0	122
P.H.V: (1)	0	19	5	0	10	19	5	8	2	3	2	0	73
P.H.F: (2)		0.545			0.659			0.750			0.417		0.869

(1) Peak Hour Volume (Peak Hour Begins At 415 PM)
(2) Peak Hour Factor (directional aggregate)

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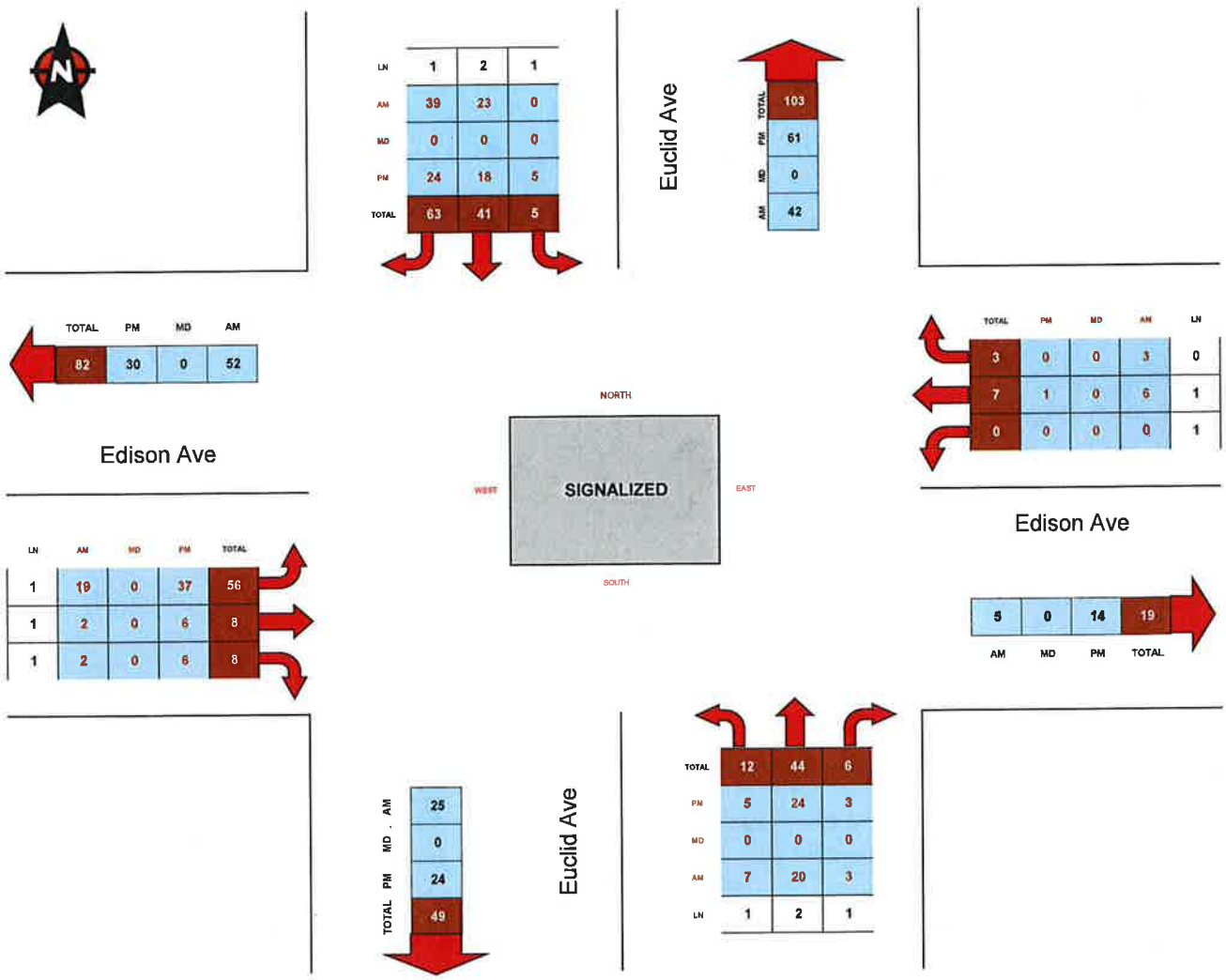
PEAK HOUR ITM SUMMARY

#009 Euclid Ave & Edison Ave

LOCATION#:	009	QTD PROJ#:	100142	AM PEAK:	800 AM
NORTH / SOUTH:	Euclid Ave	DATE:	Thursday, June 03, 2010	MD PEAK:	
EAST / WEST:	Edison Ave	VICINITY:	City of Chino	PM PEAK:	400 PM



AM COUNT	7:00 AM	TO	9:00 AM	MD COUNT	-	TO	-	PM COUNT	4:00 PM TO 6:00 PM

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VEHICLE TURNING MOVEMENT COUNT

#009 Euclid Ave & Edison Ave - AM PEAK

LOCATION#:	009	QTD PROJ#:	100142
NORTH / SOUTH:	Euclid Ave	DATE:	Thursday, June 03, 2010
EAST / WEST:	Edison Ave	VICINITY:	City of Chino

DIRECTION:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTALS
LANES:	1	2	1	1	2	1	1	1	1	1	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	5	0	0	3	9	4	1	0	0	0	0	22
7:15 AM	2	3	1	1	5	6	3	0	1	1	0	0	23
7:30 AM	0	6	0	1	1	6	11	1	1	0	0	1	28
7:45 AM	0	7	0	0	1	12	3	0	0	0	1	0	24
8:00 AM	3	4	0	0	4	4	2	1	0	0	2	2	22
8:15 AM	2	6	1	0	5	13	7	1	0	0	0	0	35
8:30 AM	1	5	1	0	8	12	6	0	1	0	0	0	34
8:45 AM	1	5	1	0	6	10	4	0	1	0	4	1	33
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													

VOLUME STATS:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
TOTAL:	9	41	4	2	33	72	40	4	4	1	7	4	221
P.H.V: (1)	7	20	3	0	23	39	19	2	2	0	6	3	124
P.H.F: (2)		0.833			0.775			0.719			0.450		0.886

(1) Peak Hour Volume (Peak Hour Begins At 800 AM)
(2) Peak Hour Factor (directional aggregate)

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VEHICLE TURNING MOVEMENT COUNT

#009 Euclid Ave & Edison Ave - PM PEAK

LOCATION#:	009	QTD PROJ#:	100142
NORTH / SOUTH:	Euclid Ave	DATE:	Thursday, June 03, 2010
EAST / WEST:	Edison Ave	VICINITY:	City of Chino

DIRECTION:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTALS
LANES:	1	2	1	1	2	1	1	1	1	1	1	0	
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	2	13	2	3	6	5	9	3	1	0	1	0	45
4:15 PM	2	2	0	1	3	7	8	1	1	0	0	0	25
4:30 PM	0	3	1	0	5	10	10	2	1	0	0	0	32
4:45 PM	1	6	0	1	4	2	10	0	3	0	0	0	27
5:00 PM	1	7	0	0	2	5	8	1	1	0	0	1	26
5:15 PM	0	1	0	0	3	1	2	0	1	1	1	2	12
5:30 PM	0	5	1	0	5	4	12	1	0	0	2	0	30
5:45 PM	0	7	1	0	3	0	5	0	0	0	0	0	16
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

VOLUME STATS:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
TOTAL:	6	44	5	5	31	34	64	8	8	1	4	3	213
P.H.V: (1)	5	24	3	5	18	24	37	6	6	0	1	0	129
P.H.F: (2)		0.471			0.783			0.942			0.250		0.717

(1) Peak Hour Volume (Peak Hour Begins At 400 PM)
(2) Peak Hour Factor (directional aggregate)

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WEBSTER

WEbster Based Signal Timing Evaluation Routine

For Capacity and Level of Service Analysis Using HCM 2000 Control Delay

Existing

Edison Avenue at Euclid Avenue **City of Chino** **AM Peak Hour**

Input

	Eastbound			Westbound			Northbound			Southbound		
Movement Times	*L*	T	R	L	*T*	R	*L*	T	R	L	*T*	R
Movement 1: 11 secs	X			X								
Movement 2: 21 secs		X	X		X	X						
Movement 3: 13 secs							X			X		
Movement 4: 24 secs								X	X		X	X
Movement 5: 0 secs												
Movement 6: 0 secs												
# of Lanes (#, S, P)	1	1	1	1	1	S	1	2	1	1	2	1
Unadjusted Volume	154	81	143	60	315	30	179	695	26	25	815	265
Peak Hour Factor (PHF)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (%)												
Project Trip Volume (vph)												
Sat. Flow Override (vph)						Shrd						
Min. Time or Ped. Time	10	20	20	10	20	20	10	20	20	10	20	20
Permissive Veh/Cycle												
Progression Adj. Factor (PAF)	0.10	0.10	1.00	0.10	0.10	-	0.10	0.10	1.00	0.10	0.10	1.00

Parameter Values (using default set 'SANBAG (Existing)')

	Other	Default
Duration of Peak Period (min)		15
Lost Time (sec)		2
Min. Time (Left Turns, sec)		10
Min/Ped Time (Thru Lanes, sec)		20
Sat Flow (1 Left lane, vphg)	1700	1800
Sat Flow (2 Left lanes, vphg)	3200	3500
Sat Flow (1 Thru lane, vphg)	1800	1900
Sat Flow (1 Right lane, vphg)		1800
Vehicle Length (feet)		20

Output

	***				***		***				***	
Pk. Hr. Vol. (vph)	162	85	151	63	332	32	188	732	27	26	858	279
Saturation Flow (vph)	1700	1800	1800	1700	1800	Shrd	1700	3600	1800	1700	3600	1800
X or V/C	0.73	0.17	0.30	0.28	0.73	-	0.69	0.64	0.05	0.10	0.75	0.49
Effective green (sec)	9	19	19	9	19	-	11	22	22	11	22	22
Split Time (sec)	11	21	21	11	21	-	13	24	24	13	24	24
Min. Time or Ped. Time (sec)	10	20	20	10	20	-	10	20	20	10	20	20
Delay - 15 min pk (sec/veh)	22	3	21	6	12	-	16	5	16	3	7	22
Level of Service (LOS)	C+	A	C+	A	B	-	B	A	B	A	A	C+
Average 'Q' (veh/ln)	1	1	2	1	1	-	1	1	1	1	1	4
Design 'Q'- ft/ln	40	40	60	40	40	-	40	40	40	40	40	120
Do Vehicles Clear?	YES	YES	YES	YES	YES	-	YES	YES	YES	YES	YES	YES

Summary

Whole Intersection

Weighted Avg Delay (sec) = 10
Level of Service - LOS = B

Critical Movements

Weighted Avg Delay (sec) = 10
Level of Service - LOS = B
Intersection Capacity Utilization - ICU = 0.73

Required Cycle Length is 69 sec

Min./Ped. Times Satisfied

WEBSTER

WEbster Based Signal Timing Evaluation Routine

For Capacity and Level of Service Analysis Using HCM 2000 Control Delay

Existing

Edison Avenue at Euclid Avenue **City of Chino** **PM Peak Hour**

Input

	Eastbound			Westbound			Northbound			Southbound		
Movement Times	*L*	*T*	R	L	T	R	*L*	*T*	R	L	T	R
Movement 1: 18 secs	X			X								
Movement 2: 20 secs		X	X		X	X						
Movement 3: 10 secs							X			X		
Movement 4: 26 secs								X	X		X	X
Movement 5: 0 secs												
Movement 6: 0 secs												
# of Lanes (#, S, P)	1	1	1	1	1	S	1	2	1	1	2	1
Unadjusted Volume	320	380	132	35	114	35	120	978	66	67	656	219
Peak Hour Factor (PHF)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (%)												
Project Trip Volume (vph)												
Sat. Flow Override (vph)						Shrd						
Min. Time or Ped. Time	10	20	20	10	20	20	10	20	20	10	20	20
Permissive Veh/Cycle												
Progression Adj. Factor (PAF)	1.00	1.00	1.00	1.00	1.00	-	1.00	1.00	1.00	1.00	1.00	1.00

Parameter Values (using default set 'SANBAG (Existing)')

	Other	Default
Duration of Peak Period (min)		15
Lost Time (sec)		2
Min. Time (Left Turns, sec)		10
Min/Ped Time (Thru Lanes, sec)		20
Sat Flow (1 Left lane, vphg)	1700	1800
Sat Flow (2 Left lanes, vphg)	3200	3500
Sat Flow (1 Thru lane, vphg)	1800	1900
Sat Flow (1 Right lane, vphg)		1800
Vehicle Length (feet)		20

Output

	***	***					***	***				
Pk. Hr. Vol. (vph)	337	400	139	37	120	37	126	1029	69	71	691	231
Saturation Flow (vph)	1700	1800	1800	1700	1800	Shrd	1700	3600	1800	1700	3600	1800
X or V/C	0.92	0.91	0.32	0.10	0.36	-	0.69	0.88	0.12	0.39	0.59	0.40
Effective green (sec)	16	18	18	16	18	-	8	24	24	8	24	24
Split Time (sec)	18	20	20	18	20	-	10	26	26	10	26	26
Min. Time or Ped. Time (sec)	10	20	20	10	20	-	10	20	20	10	20	20
Delay - 15 min pk (sec/veh)	58	53	25	24	25	-	51	33	18	37	23	21
Level of Service (LOS)	E+	D-	C+	C+	C	-	D-	C-	B	D+	C+	C+
Average 'Q' (veh/ln)	6	7	2	1	2	-	2	7	1	1	5	3
Design 'Q'- ft/ln	180	220	60	40	60	-	60	220	40	40	160	100
Do Vehicles Clear?	NO	YES	YES	YES	YES	-	YES	YES	YES	YES	YES	YES

Summary

Whole Intersection

Weighted Avg Delay (sec) = 35
Level of Service - LOS = C-

Critical Movements

Weighted Avg Delay (sec) = 43
Level of Service - LOS = D
Intersection Capacity Utilization - ICU = 0.88

Required Cycle Length is 74 sec

Min./Ped. Times Satisfied