Pico Power Project

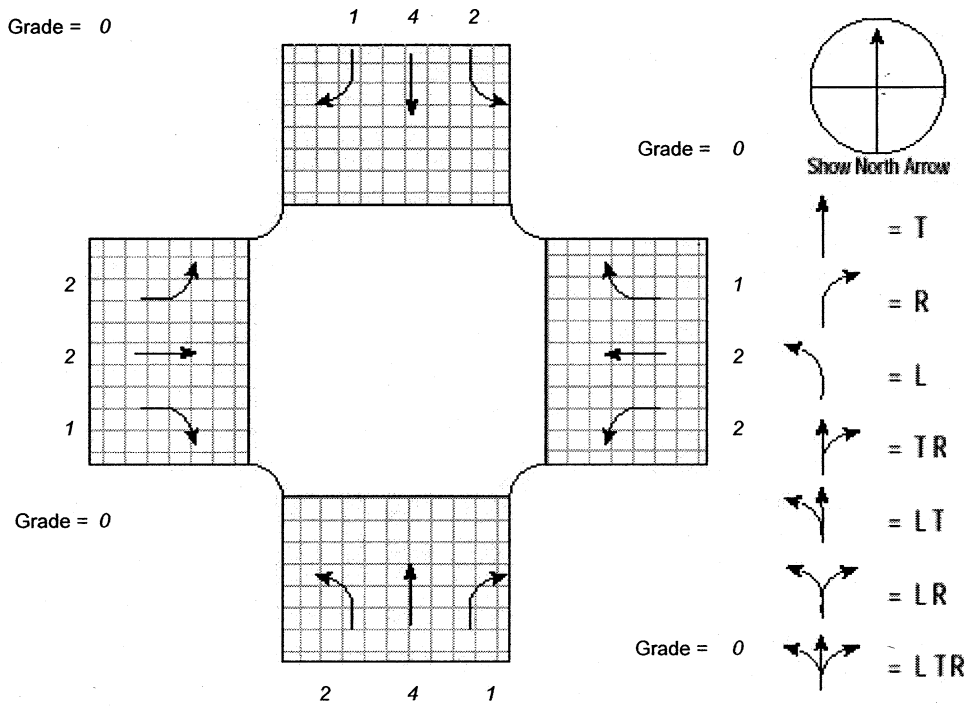
Appendix 8.12-A
Traffic Modeling Data

October 2002

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*San Tomas at Scott*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*AM Peak Existing*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*97*	*108*	*19*	*372*	*262*	*46*	*78*	*3535*	*317*	*231*	*1324*	*296*
% Heavy veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Arrival type	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*
Ped volume	*0*			*0*			*0*			*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	Excl. Left	WB Only	Thru & RT	04	Excl. Left	SB Only	Thru & RT	08
Timing	G = *4.4*	G = *8.2*	G = *4.4*	G =	G = *3.5*	G = *2.9*	G = *72.6*	G =
	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *120.0*		

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HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: San Tomas at Scott
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/1/02
Jurisdiction: City of Santa Clara
Analysis Time Period: AM Peak Existing
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Scott Blvd
North/South Street: San Tomas Expressway

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	2	1	2	2	1	2	4	1	2	4	1
Volume	97	108	19	372	262	46	78	3535	317	231	1324	296
Parking		N			N			N			N	
Coord.		Y			Y			Y			Y	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	97	372	78	231
2. Opposing mainline volume	308	127	1620	3852
3. Number of exclusive LT lanes	2	2	2	2
Cross Product [2] * [1]	29876	47244	126360	889812
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.920
5. LT lane vol	53	202	42	126
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	19	46	317	296
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	22	54	373	348
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	108	262	3535	1324
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	2	2	4	4
14. Total approach volume	108	262	3535	1324
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	54	131	884	331
19. Critical lane volume	54	131	884	348

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS
WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	54	131	884	348
LT lane vol: [5]	53	202	42	126
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')		<		<

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3b 3b

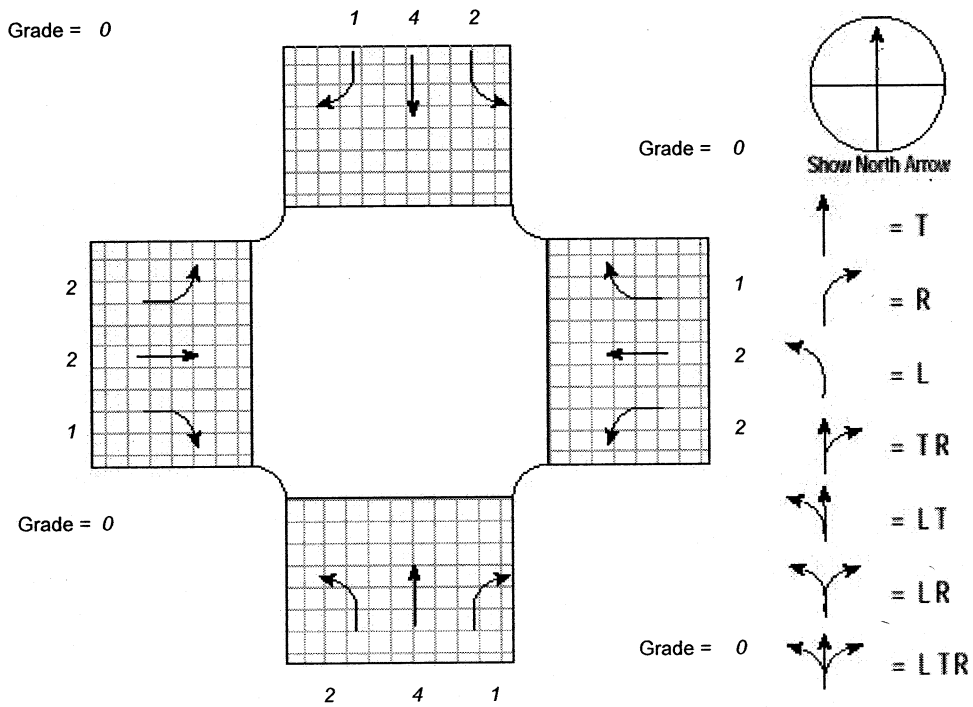
Min. cycle (Cmin) 120 Max. cycle (Cmax) 190

Timing Plan	Value	EAST-WEST Ph 1	Ph 2	Ph 3	NORTH-SOUTH Ph 1	Ph 2	Ph 3
Movement codes		EWL	WTL	EWT	NSL	STL	NST
Critical phase vol [CV]		53	149	54	42	84	884
Critical sum [CS]	1266						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	120.0						
Phase time		8.4	12.2	8.4	7.5	6.9	76.6
Critical v/c Ratio [Xcm]	0.95						
Status	Near capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*San Tomas at Scott*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*AM Peak w/Peak Construction*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*97*	*108*	*19*	*372*	*262*	*46*	*78*	*3535*	*317*	*261*	*1324*	*296*
% Heavy veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Arrival type	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*
Ped volume	*0*			*0*			*0*			*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	Excl. Left	WB Only	Thru & RT	04	Excl. Left	SB Only	Thru & RT	08
Timing	G = *4.3*	G = *8.1*	G = *4.4*	G =	G = *3.4*	G = *4.1*	G = *71.7*	G =
	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *120.0*		

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Science Dept
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Phone: Fax:
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PLANNING ANALYSIS

Analyst: Slusser
Intersection: San Tomas at Scott
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/1/02
Jurisdiction: City of Santa Clara
Analysis Time Period: AM Peak w/Peak Construction
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Scott Blvd
North/South Street: San Tomas Expressway

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	2	1	2	2	1	2	4	1	2	4	1
Volume	97	108	19	372	262	46	78	3535	317	261	1324	296
Parking		N			N			N			N	
Coord.		Y			Y			Y			Y	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	97	372	78	261
2. Opposing mainline volume	308	127	1620	3852
3. Number of exclusive LT lanes	2	2	2	2
Cross Product [2] * [1]	29876	47244	126360	1005372
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.920
5. LT lane vol	53	202	42	142
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	19	46	317	296
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	22	54	373	348
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	108	262	3535	1324
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	2	2	4	4
14. Total approach volume	108	262	3535	1324
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	54	131	884	331
19. Critical lane volume	54	131	884	348

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	54	131	884	348
LT lane vol: [5]	53	202	42	142
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')		<		<

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N
Phase plan selected (1 to 4)		3b		3b

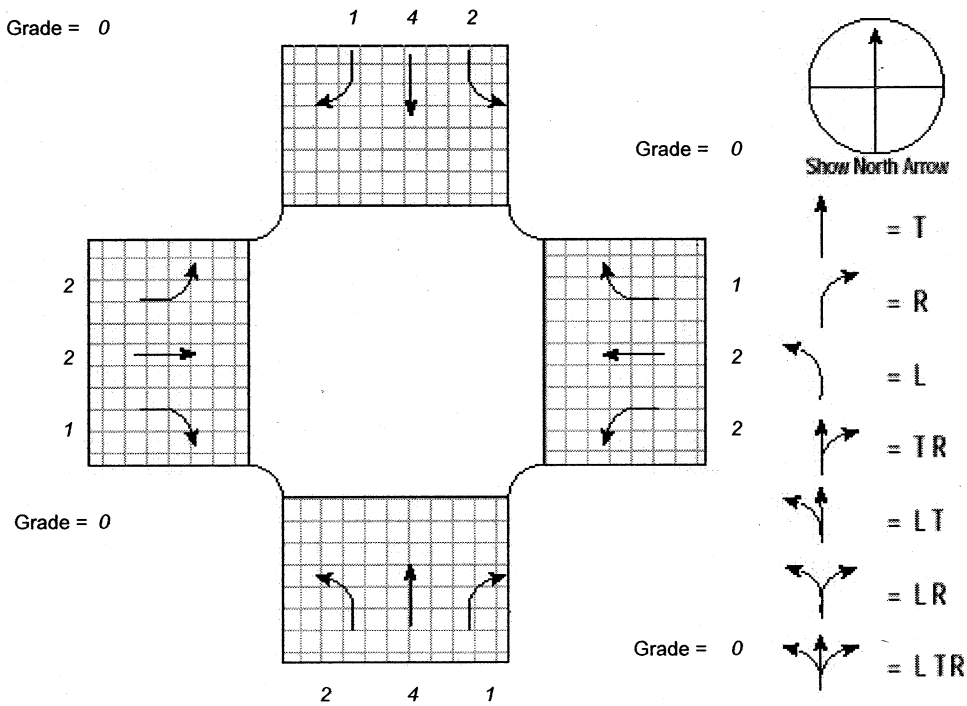
Min. cycle (Cmin) 120 Max. cycle (Cmax) 190

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	WTL	EWT	NSL	STL	NST
Critical phase vol [CV]		53	149	54	42	100	884
Critical sum [CS]	1282						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	120.0						
Phase time		8.3	12.1	8.4	7.4	8.1	75.7
Critical v/c Ratio [Xcm]	0.96						
Status	At capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*San Tomas at Scott*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*AM Peak w/Peak Operations*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	97	108	19	372	262	46	78	3535	317	234	1324	296
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ext. eff. green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival type	4	4	4	4	4	4	4	4	4	4	4	4
Ped volume	0			0			0			0		
Bicycle volume												
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0	0	0	0	0	0	0	0
Ped timing	0.0			0.0			3.0			0.0		

	Excl. Left	WB Only	Thru & RT	04	Excl. Left	SB Only	Thru & RT	08
Timing	G = 4.4	G = 8.2	G = 4.4	G =	G = 3.4	G = 3.0	G = 72.6	G =
	Y = 4.0	Y = 4.0	Y = 4.0	Y =	Y = 4.0	Y = 4.0	Y = 4.0	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0		

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FWENC

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E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: San Tomas at Scott
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/1/02
Jurisdiction: City of Santa Clara
Analysis Time Period: AM Peak w/Peak Operations
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Scott Blvd
North/South Street: San Tomas Expressway

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	2	1	2	2	1	2	4	1	2	4	1
Volume	97	108	19	372	262	46	78	3535	317	234	1324	296
Parking		N			N			N			N	
Coord.		Y			Y			Y			Y	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	97	372	78	234
2. Opposing mainline volume	308	127	1620	3852
3. Number of exclusive LT lanes	2	2	2	2
Cross Product [2] * [1]	29876	47244	126360	901368
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.920
5. LT lane vol	53	202	42	127
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	19	46	317	296
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	22	54	373	348
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	108	262	3535	1324
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	2	2	4	4
14. Total approach volume	108	262	3535	1324
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	54	131	884	331
19. Critical lane volume	54	131	884	348

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	54	131	884	348
LT lane vol: [5]	53	202	42	127
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')		<		<

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3b 3b

Min. cycle (Cmin) 120 Max. cycle (Cmax) 190

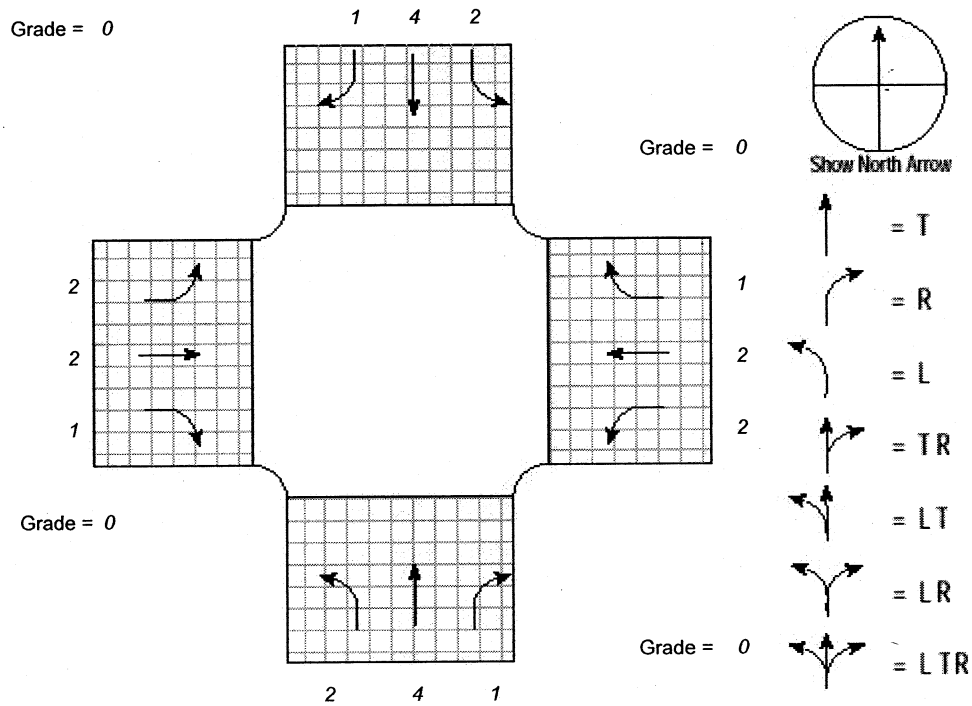
Timing Plan

	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	WTL	EWT	NSL	STL	NST
Critical phase vol [CV]		53	149	54	42	85	884
Critical sum [CS]	1267						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	120.0						
Phase time		8.4	12.2	8.4	7.4	7.0	76.6
Critical v/c Ratio [Xcm]	0.95						
Status	Near capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*San Tomas at Scott*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*PM Peak Existing*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*317*	*332*	*44*	*61*	*106*	*307*	*44*	*1512*	*36*	*203*	*4718*	*127*
% Heavy veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Arrival type	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*
Ped volume	*0*			*0*			*0*			*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	Excl. Left	EB Only	Thru & RT	04	Excl. Left	SB Only	Thru & RT	08
Timing	G = *3.3*	G = *9.9*	G = *36.2*	G =	G = *2.4*	G = *4.6*	G = *109.6*	G =
	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *190.0*		

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E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: San Tomas at Scott
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/1/02
Jurisdiction: City of Santa Clara
Analysis Time Period: PM Peak Existing
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Scott Blvd
North/South Street: San Tomas Expressway

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	2	1	2	2	1	2	4	1	2	4	1
Volume	317	332	44	61	106	307	44	1512	36	203	4718	127
Parking		N			N			N			N	
Coord.		Y			Y			Y			Y	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	317	61	44	203
2. Opposing mainline volume	413	376	4845	1548
3. Number of exclusive LT lanes	2	2	2	2
Cross Product [2] * [1]	130921	22936	213180	314244
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.920
5. LT lane vol	172	33	24	110
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	44	307	36	127
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	52	361	42	149
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	332	106	1512	4718
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	2	2	4	4
14. Total approach volume	332	106	1512	4718
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	166	53	378	1180
19. Critical lane volume	166	361	378	1180

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	166	361	378	1180
LT lane vol: [5]	172	33	24	110
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')	<			<

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3a 3b

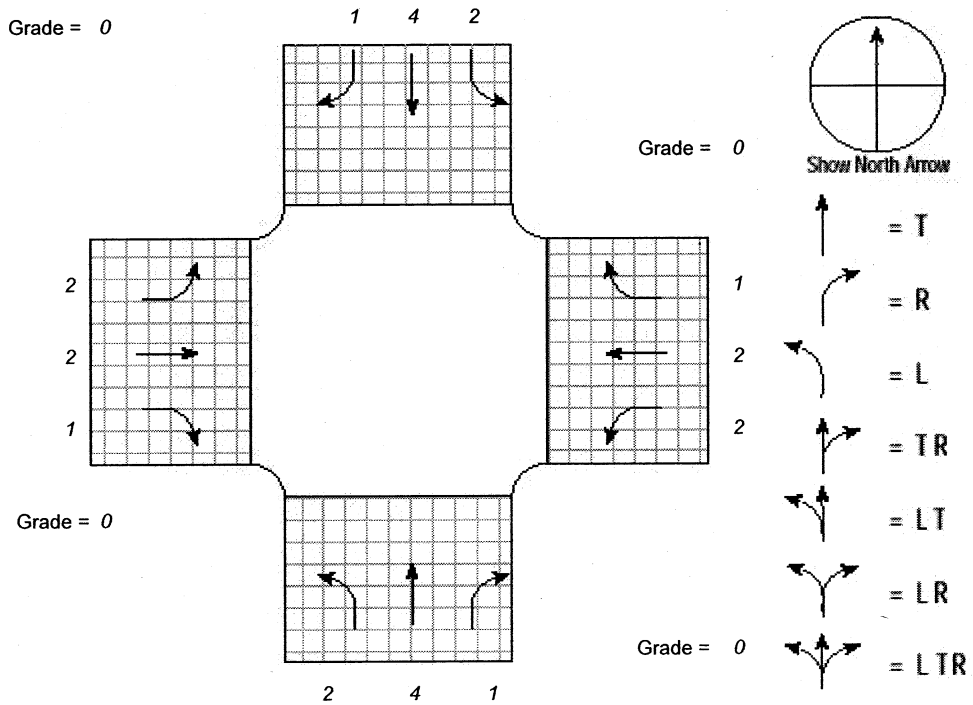
Min. cycle (Cmin) 120 Max. cycle (Cmax) 190

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	ETL	EWT	NSL	STL	NST
Critical phase vol [CV]		33	139	361	24	86	1094
Critical sum [CS]	1737						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	190.0						
Phase time		7.3	13.9	40.2	6.4	8.6	113.6
Critical v/c Ratio [Xcm]	1.23						
Status	Over capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*San Tomas at Scott*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/19/02*	Jurisdiction	*City of Santa Clara*
Time Period	*PM Peak w/Peak Construction*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*317*	*332*	*44*	*61*	*106*	*337*	*44*	*1512*	*36*	*203*	*4718*	*127*
% Heavy veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Arrival type	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*
Ped volume		*0*			*0*			*0*			*0*	
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ped timing		*0.0*			*0.0*			*3.0*			*0.0*	

	Excl. Left	EB Only	Thru & RT	04	Excl. Left	SB Only	Thru & RT	08
Timing	G = *3.2*	G = *9.6*	G = *38.9*	G =	G = *2.4*	G = *4.4*	G = *107.4*	G =
	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *190.0*		

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Science Dept
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Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: San Tomas at Scott
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/19/02
Jurisdiction: City of Santa Clara
Analysis Time Period: PM Peak w/Peak Construction
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Scott Blvd
North/South Street: San Tomas Expressway

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	2	1	2	2	1	2	4	1	2	4	1
Volume	317	332	44	61	106	337	44	1512	36	203	4718	127
Parking		N			N			N			N	
Coord.		Y			Y			Y			Y	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	317	61	44	203
2. Opposing mainline volume	443	376	4845	1548
3. Number of exclusive LT lanes	2	2	2	2
Cross Product [2] * [1]	140431	22936	213180	314244
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.920
5. LT lane vol	172	33	24	110
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	44	337	36	127
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	52	396	42	149
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	332	106	1512	4718
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	2	2	4	4
14. Total approach volume	332	106	1512	4718
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	166	53	378	1180
19. Critical lane volume	166	396	378	1180

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	166	396	378	1180
LT lane vol: [5]	172	33	24	110
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')	<			<

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3a 3b

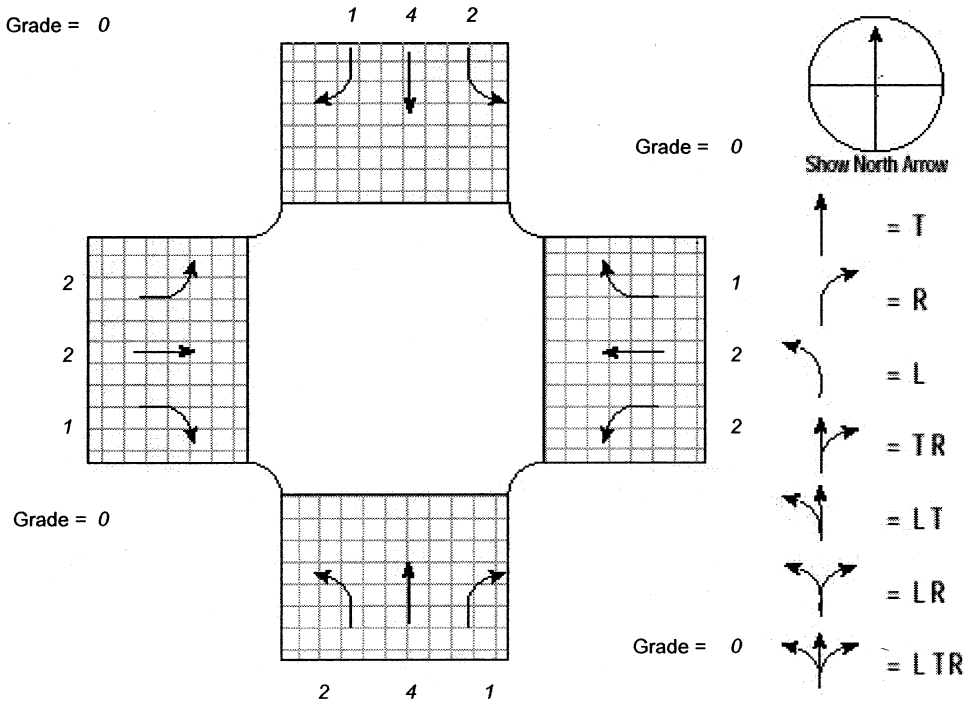
Min. cycle (Cmin) 120 Max. cycle (Cmax) 190

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	ETL	EWT	NSL	STL	NST
Critical phase vol [CV]		33	139	396	24	86	1094
Critical sum [CS]	1772						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	190.0						
Phase time		7.2	13.6	42.9	6.4	8.4	111.4
Critical v/c Ratio [Xcm]	1.26						
Status	Over capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*San Tomas at Scott*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/19/02*	Jurisdiction	*City of Santa Clara*
Time Period	*PM Peak w/Peak Operations*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*317*	*332*	*44*	*61*	*106*	*310*	*44*	*1512*	*36*	*203*	*4718*	*127*
% Heavy veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Arrival type	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*
Ped volume	*0*			*0*			*0*			*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	Excl. Left	EB Only	Thru & RT	04	Excl. Left	SB Only	Thru & RT	08
Timing	G = *3.3*	G = *9.9*	G = *36.5*	G =	G = *2.4*	G = *4.6*	G = *109.3*	G =
	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *190.0*		

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Science Dept
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Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: San Tomas at Scott
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/19/02
Jurisdiction: City of Santa Clara
Analysis Time Period: PM Peak w/Peak Operations
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Scott Blvd
North/South Street: San Tomas Expressway

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	2	1	2	2	1	2	4	1	2	4	1
Volume	317	332	44	61	106	310	44	1512	36	203	4718	127
Parking		N			N			N			N	
Coord.		Y			Y			Y			Y	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	317	61	44	203
2. Opposing mainline volume	416	376	4845	1548
3. Number of exclusive LT lanes	2	2	2	2
Cross Product [2] * [1]	131872	22936	213180	314244
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.920
5. LT lane vol	172	33	24	110
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	44	310	36	127
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	52	365	42	149
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	332	106	1512	4718
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	2	2	4	4
14. Total approach volume	332	106	1512	4718
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	166	53	378	1180
19. Critical lane volume	166	365	378	1180

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	166	365	378	1180
LT lane vol: [5]	172	33	24	110
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')	<			<

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3a 3b

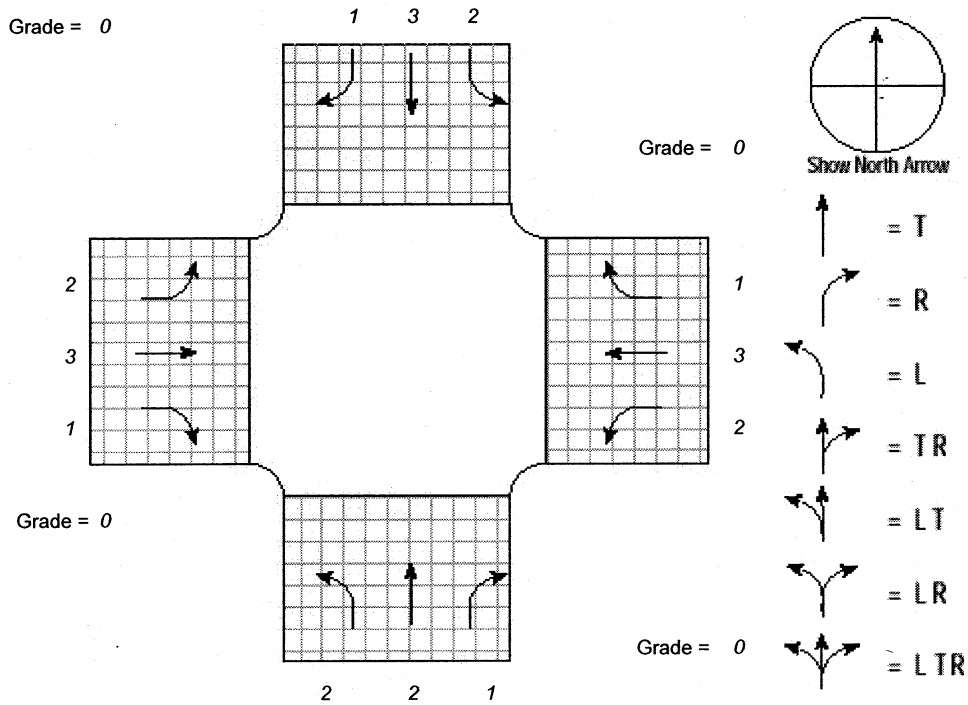
Min. cycle (Cmin) 120 Max. cycle (Cmax) 190

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	ETL	EWT	NSL	STL	NST
Critical phase vol [CV]		33	139	365	24	86	1094
Critical sum [CS]	1741						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	190.0						
Phase time		7.3	13.9	40.5	6.4	8.6	113.3
Critical v/c Ratio [Xcm]	1.24						
Status	Over capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at Scott*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*AM Peak Existing*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*64*	*804*	*293*	*252*	*986*	*145*	*594*	*473*	*484*	*60*	*128*	*33*
% Heavy veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Arrival type	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*
Ped volume	*0*			*0*			*0*			*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	Excl. Left	WB Only	Thru & RT	04	Excl. Left	NB Only	Thru & RT	08
Timing	G = *3.4*	G = *5.8*	G = *33.1*	G =	G = *3.2*	G = *23.8*	G = *26.8*	G =
	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =
Duration of Analysis (hrs) = *0.25*					Cycle Length C = *120.0*			

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HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at Scott
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/1/02
Jurisdiction: City of Santa Clara
Analysis Time Period: AM Peak Existing
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: Scott Blvd

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	3	1	2	3	1	2	2	1	2	3	1
Volume	64	804	293	252	986	145	594	473	484	60	128	33
Parking		N			N			N			N	
Coord.		Y			Y			Y			Y	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	64	252	594	60
2. Opposing mainline volume	1131	1097	161	957
3. Number of exclusive LT lanes	2	2	2	2
Cross Product [2] * [1]	72384	276444	95634	57420
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.920
5. LT lane vol	35	137	323	33
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	293	145	484	33
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	345	171	569	39
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	804	986	473	128
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	3	3	2	3
14. Total approach volume	804	986	473	128
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	268	329	236	43
19. Critical lane volume	345	329	569	43

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	345	329	569	43
LT lane vol: [5]	35	137	323	33
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')		<	<	

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3b 3a

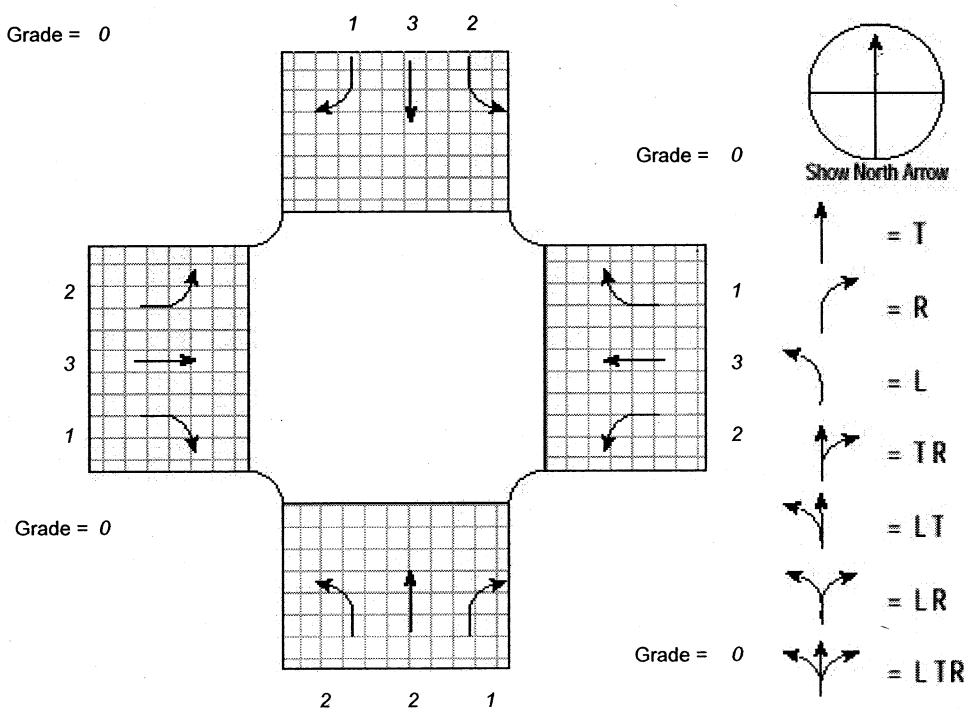
Min. cycle (Cmin) 120 Max. cycle (Cmax) 150

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	WTL	EWT	NSL	NTL	NST
Critical phase vol [CV]		35	102	345	33	290	279
Critical sum [CS]	1084						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	120.0						
Phase time		7.4	9.8	37.1	7.2	27.8	30.8
Critical v/c Ratio [Xcm]	0.81						
Status	Under capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at Scott*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*AM Peak w/Peak Construction*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	64	834	293	252	986	145	594	473	491	97	128	33
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ext. eff. green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival type	4	4	4	4	4	4	4	4	4	4	4	4
Ped volume	0			0			0			0		
Bicycle volume												
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0	0	0	0	0	0	0	0
Ped timing	0.0			0.0			3.0			0.0		

	Excl. Left	WB Only	Thru & RT	04	Excl. Left	NB Only	Thru & RT	08
Timing	G = 3.3	G = 5.5	G = 32.2	G =	G = 5.0	G = 21.2	G = 28.8	G =
	Y = 4.0	Y = 4.0	Y = 4.0	Y =	Y = 4.0	Y = 4.0	Y = 4.0	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0		

HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at Scott
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/1/02
Jurisdiction: City of Santa Clara
Analysis Time Period: AM Peak w/Peak Construction
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: Scott Blvd

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	3	1	2	3	1	2	2	1	2	3	1
Volume	64	834	293	252	986	145	594	473	491	97	128	33
Parking		N			N			N			N	
Coord.		Y			Y			Y			Y	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	64	252	594	97
2. Opposing mainline volume	1131	1127	161	964
3. Number of exclusive LT lanes	2	2	2	2
Cross Product [2] * [1]	72384	284004	95634	93508
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.920
5. LT lane vol	35	137	323	53
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	293	145	491	33
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	345	171	578	39
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	834	986	473	128
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	3	3	2	3
14. Total approach volume	834	986	473	128
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	278	329	236	43
19. Critical lane volume	345	329	578	43

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	345	329	578	43
LT lane vol: [5]	35	137	323	53
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')		<	<	

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3b 3a

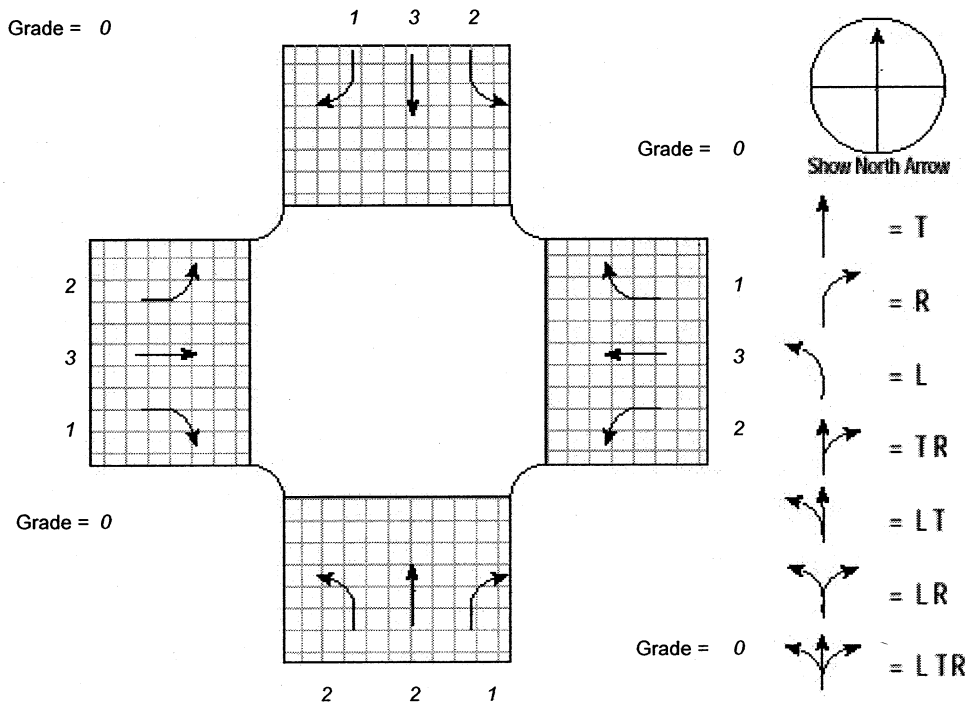
Min. cycle (Cmin) 120 Max. cycle (Cmax) 150

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	WTL	EWT	NSL	NTL	NST
Critical phase vol [CV]		35	102	345	53	270	308
Critical sum [CS]	1113						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	120.0						
Phase time		7.3	9.5	36.2	9.0	25.2	32.8
Critical v/c Ratio [Xcm]	0.83						
Status	Under capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at Scott*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*AM Peak w/Peak Operations*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	64	806	293	252	986	145	594	473	485	63	128	33
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ext. eff. green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival type	4	4	4	4	4	4	4	4	4	4	4	4
Ped volume	0			0			0			0		
Bicycle volume												
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0	0	0	0	0	0	0	0
Ped timing	0.0			0.0			3.0			0.0		

	Excl. Left	WB Only	Thru & RT	04	Excl. Left	NB Only	Thru & RT	08
Timing	G = 3.3	G = 5.8	G = 33.0	G =	G = 3.3	G = 23.7	G = 27.0	G =
	Y = 4.0	Y = 4.0	Y = 4.0	Y =	Y = 4.0	Y = 4.0	Y = 4.0	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0		

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HCS2000: Signalized Intersections Release 4.1

Science Dept
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Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst:	Slusser
Intersection:	Central at Scott
Agency/Co.:	Foster Wheeler Environmental
Area Type:	All other areas
Date Performed:	7/1/02
Jurisdiction:	City of Santa Clara
Analysis Time Period:	AM Peak w/Peak Operations
Analysis Year:	2002

Project ID: SVP Pico Power Project

East/West Street: Central Expressway

North/South Street: Scott Blvd

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	3	1	2	3	1	2	2	1	2	3	1
Volume	64	806	293	252	986	145	594	473	485	63	128	33
Parking		N			N			N			N	
Coord.		Y			Y			Y			Y	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	64	252	594	63
2. Opposing mainline volume	1131	1099	161	958
3. Number of exclusive LT lanes	2	2	2	2
Cross Product [2] * [1]	72384	276948	95634	60354
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.920
5. LT lane vol	35	137	323	34
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	293	145	485	33
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	345	171	571	39
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	806	986	473	128
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	3	3	2	3
14. Total approach volume	806	986	473	128
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	269	329	236	43
19. Critical lane volume	345	329	571	43

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	345	329	571	43
LT lane vol: [5]	35	137	323	34
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')		<	<	

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3b 3a

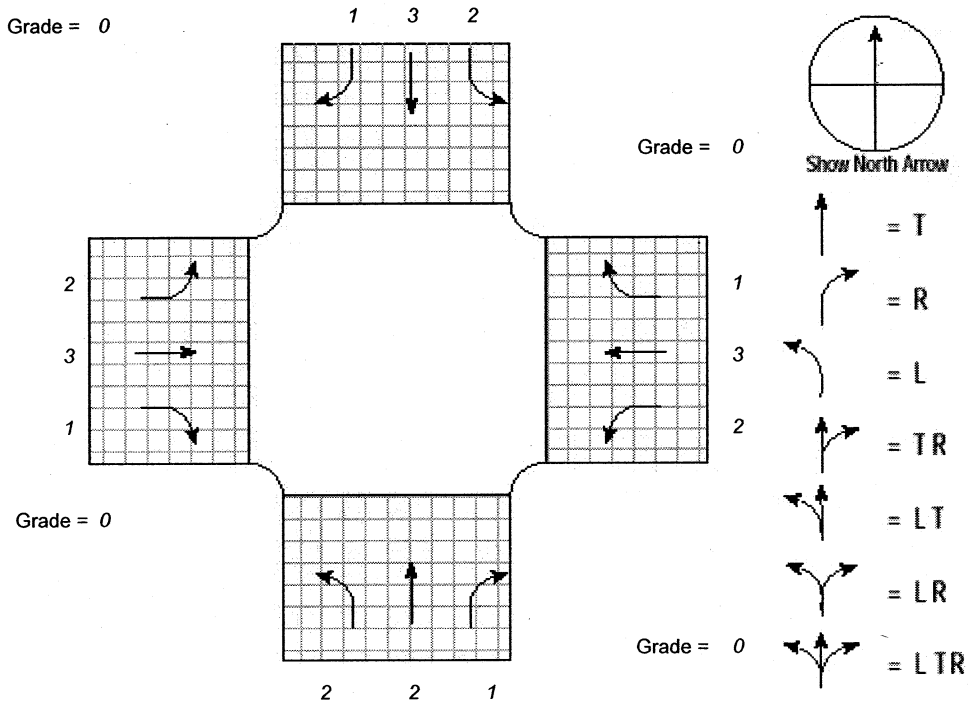
Min. cycle (Cmin) 120 Max. cycle (Cmax) 150

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	WTL	EWT	NSL	NTL	NST
Critical phase vol [CV]		35	102	345	34	289	282
Critical sum [CS]	1087						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	120.0						
Phase time		7.3	9.8	37.0	7.3	27.7	31.0
Critical v/c Ratio [Xcm]	0.81						
Status	Under capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at Scott*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*PM Peak Existing*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*83*	*1369*	*693*	*283*	*588*	*48*	*238*	*157*	*311*	*193*	*355*	*75*
% Heavy veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Arrival type	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*
Ped volume	*0*			*0*			*0*			*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	Excl. Left	WB Only	Thru & RT	04	Excl. Left	NB Only	Thru & RT	08
Timing	G = *5.1*	G = *8.4*	G = *92.8*	G =	G = *12.0*	G = *2.7*	G = *39.0*	G =
	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =	Y = *4.0*	Y =	Y = *4.0*	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *180.0*		

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Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst:	Slusser
Intersection:	Central at Scott
Agency/Co.:	Foster Wheeler Environmental
Area Type:	All other areas
Date Performed:	7/1/02
Jurisdiction:	City of Santa Clara
Analysis Time Period:	PM Peak Existing
Analysis Year:	2002

Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: Scott Blvd

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	3	1	2	3	1	2	2	1	2	3	1
Volume	83	1369	693	283	588	48	238	157	311	193	355	75
Parking		N			N			N			N	
Coord.		Y			Y			Y			Y	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	83	283	238	193
2. Opposing mainline volume	636	2062	430	468
3. Number of exclusive LT lanes	2	2	2	2
Cross Product [2] * [1]	52788	583546	102340	90324
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.920
5. LT lane vol	45	154	129	105
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	693	48	311	75
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	815	56	366	88
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	1369	588	157	355
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	3	3	2	3
14. Total approach volume	1369	588	157	355
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	456	196	78	118
19. Critical lane volume	815	196	366	118

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	815	196	366	118
LT lane vol: [5]	45	154	129	105
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')		<	<	

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3b 3a

Min. cycle (Cmin) 120 Max. cycle (Cmax) 180

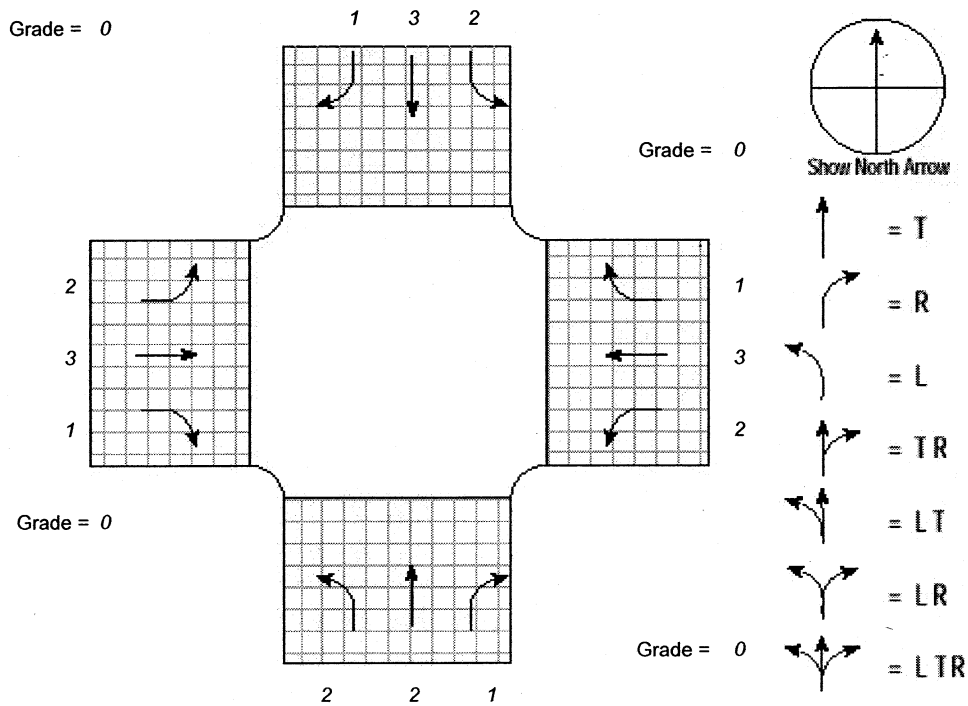
Timing Plan

	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	WTL	EWT	NSL	NTL	NST
Critical phase vol [CV]		45	109	815	105	24	342
Critical sum [CS]	1440						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	180.0						
Phase time		9.1	12.4	96.8	16.0	2.7	43.0
Critical v/c Ratio [Xcm]	1.03						
Status	Over capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at Scott*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*PM Peak w/Peak Construction*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	83	1369	693	290	618	85	238	157	311	193	355	75
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ext. eff. green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival type	4	4	4	4	4	4	4	4	4	4	4	4
Ped volume	0			0			0			0		
Bicycle volume												
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0	0	0	0	0	0	0	0
Ped timing	0.0			0.0			3.0			0.0		

	Excl. Left	WB Only	Thru & RT	04	Excl. Left	NB Only	Thru & RT	08
Timing	G = 5.1	G = 8.8	G = 92.6	G =	G = 11.9	G = 2.7	G = 38.8	G =
	Y = 4.0	Y = 4.0	Y = 4.0	Y =	Y = 4.0	Y =	Y = 4.0	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 180.0		

HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at Scott
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/1/02
Jurisdiction: City of Santa Clara
Analysis Time Period: PM Peak w/Peak Construction
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: Scott Blvd

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	3	1	2	3	1	2	2	1	2	3	1
Volume	83	1369	693	290	618	85	238	157	311	193	355	75
Parking		N			N			N			N	
Coord.		Y			Y			Y			Y	
LT Treat.	P			+			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	83	290	238	193
2. Opposing mainline volume	703	2062	430	468
3. Number of exclusive LT lanes	2	2	2	2
Cross Product [2] * [1]	58349	597980	102340	90324
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.920
5. LT lane vol	45	158	129	105
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	693	85	311	75
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	815	100	366	88
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	1369	618	157	355
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	3	3	2	3
14. Total approach volume	1369	618	157	355
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	456	206	78	118
19. Critical lane volume	815	206	366	118

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	815	206	366	118
LT lane vol: [5]	45	158	129	105
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')		<	<	

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3b 3a

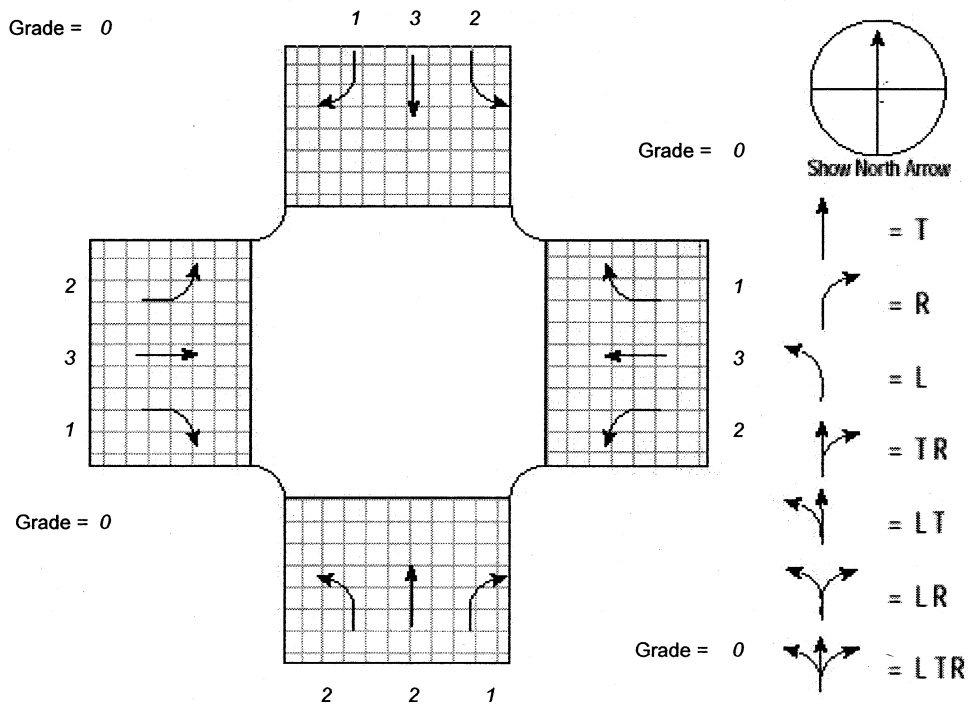
Min. cycle (Cmin) 120 Max. cycle (Cmax) 180

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	WTL	EWT	NSL	NTL	NST
Critical phase vol [CV]		45	113	815	105	24	342
Critical sum [CS]	1444						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	180.0						
Phase time		9.1	12.8	96.6	15.9	2.7	42.8
Critical v/c Ratio [Xcm]	1.03						
Status	Over capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at Scott*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*PM Peak w/Peak Operation*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*83*	*1369*	*693*	*284*	*590*	*51*	*238*	*157*	*311*	*193*	*355*	*75*
% Heavy veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Arrival type	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*
Ped volume	*0*			*0*			*0*			*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	Excl. Left	WB Only	Thru & RT	04	Excl. Left	NB Only	Thru & RT	08
Timing	G = *5.1*	G = *8.4*	G = *92.8*	G =	G = *12.0*	G = *2.7*	G = *39.0*	G =
	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =	Y = *4.0*	Y =	Y = *4.0*	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *180.0*		

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HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at Scott
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/1/02
Jurisdiction: City of Santa Clara
Analysis Time Period: PM Peak w/Peak Operation
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: Scott Blvd

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	3	1	2	3	1	2	2	1	2	3	1
Volume	83	1369	693	284	590	51	238	157	311	193	355	75
Parking		N			N			N			N	
Coord.		Y			Y			Y			Y	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	83	284	238	193
2. Opposing mainline volume	641	2062	430	468
3. Number of exclusive LT lanes	2	2	2	2
Cross Product [2] * [1]	53203	585608	102340	90324
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.920
5. LT lane vol	45	154	129	105
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	693	51	311	75
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	815	60	366	88
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	1369	590	157	355
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	3	3	2	3
14. Total approach volume	1369	590	157	355
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	456	197	78	118
19. Critical lane volume	815	197	366	118

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	815	197	366	118
LT lane vol: [5]	45	154	129	105
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')		<	<	

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3b 3a

Min. cycle (Cmin) 120 Max. cycle (Cmax) 180

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	WTL	EWT	NSL	NTL	NST
Critical phase vol [CV]		45	109	815	105	24	342
Critical sum [CS]	1440						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	180.0						
Phase time		9.1	12.4	96.8	16.0	2.7	43.0
Critical v/c Ratio [Xcm]	1.03						
Status	Over capacity						

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Slusser*		
Agency/Co.	*Foster Wheeler Environmental*	Intersection	*Duane at Lafayette*
		Jurisdiction	*City of Santa Clara*
Date Performed	*7/1/02*	Analysis Year	*2002*
Analysis Time Period	*AM Peak w/Peak Operations*	Project ID	*SVP Pico Power Project*

East/West Street: *Duane Avenue*	North/South Street: *Lafayette Street*
Intersection Orientation: *North-South*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*71*	*983*	*0*	*0*	*2439*	*48*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*71*	*983*	*0*	*0*	*2439*	*48*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*18*	*0*	*41*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*18*	*0*	*41*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*Y*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*						*LR*	
v (vph)	*71*						*59*	
C (m) (vph)	*187*						*87*	
v/c	*0.38*						*0.68*	
95% queue length	*1.78*						*4.73*	
Control Delay	*35.9*						*123.3*	
LOS	*E*						*F*	
Approach Delay	--	--				*123.3*		
Approach LOS	--	--				*F*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Slusser*		
Agency/Co.	*Foster Wheeler Environmental*	Intersection	*Duane at Lafayette*
		Jurisdiction	*City of Santa Clara*
Date Performed	*7/1/02*	Analysis Year	*2002*
Analysis Time Period	*AM Peak w/Peak Construction*	Project ID	*SVP Pico Power Project*

East/West Street: *Duane Avenue*	North/South Street: *Lafayette Street*
Intersection Orientation: *North-South*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*207*	*983*	*0*	*0*	*2439*	*83*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*207*	*983*	*0*	*0*	*2439*	*83*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*18*	*0*	*41*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*18*	*0*	*41*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*Y*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*						*LR*	
v (vph)	*207*						*59*	
C (m) (vph)	*182*							
v/c	*1.14*							
95% queue length	*24.95*							
Control Delay	*384.6*							
LOS	*F*							
Approach Delay	--	--						
Approach LOS	--	--						

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Duane at Lafayette*
Agency/Co.	*Foster Wheeler Environmental*	Jurisdiction	*City of Santa Clara*
Date Performed	*7/1/02*	Analysis Year	*2002*
Analysis Time Period	*AM Peak Existing*	Project ID	*SVP Pico Power Project*

East/West Street: *Duane Avenue*	North/South Street: *Lafayette Street*
Intersection Orientation: *North-South*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*59*	*983*	*0*	*0*	*2439*	*46*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*59*	*983*	*0*	*0*	*2439*	*46*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*18*	*0*	*41*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*18*	*0*	*41*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*Y*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*						*LR*	
v (vph)	*59*						*59*	
C (m) (vph)	*188*						*88*	
v/c	*0.31*						*0.67*	
95% queue length	*1.34*						*4.63*	
Control Delay	*32.8*						*119.9*	
LOS	*D*						*F*	
Approach Delay	--	--	*119.9*					
Approach LOS	--	--	*F*					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Duane at Lafayette*
Agency/Co.	*Foster Wheeler Environmental*	Jurisdiction	*City of Santa Clara*
Date Performed	*7/1/02*	Analysis Year	*2002*
Analysis Time Period	*PM Peak Existing*	Project ID	*SVP Pico Power Project*

East/West Street: *Duane Avenue*	North/South Street: *Lafayette Street*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*26*	*0*	*85*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*26*	*0*	*85*	*0*	*0*	*0*
Percent Heavy Vehicles	*5*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration	*LTR*	*LR*				
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*62*	*355*	*0*	*0*	*1089*	*13*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*62*	*355*	*0*	*0*	*1089*	*13*
Percent Heavy Vehicles	*5*	*5*	*0*	*0*	*5*	*5*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*		*L*	*T*			*T*	*TR*
v (vph)	*26*		*62*	*355*			*544*	*557*
C (m) (vph)	*1604*		*0*	*777*			*736*	*741*
v/c	*0.02*			*0.46*			*0.74*	*0.75*
95% queue length	*0.05*			*2.49*			*7.86*	*8.33*
Control Delay	*7.3*			*13.5*			*23.4*	*24.1*
LOS	*A*		*F*	*B*			*C*	*C*
Approach Delay	--	--				*23.7*		
Approach LOS	--	--				*C*		

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Version 4.1

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Slusser*		
Agency/Co.	*Foster Wheeler Environmental*	Intersection	*Duane at Lafayette*
		Jurisdiction	*City of Santa Clara*
Date Performed	*7/1/02*	Analysis Year	*2002*
Analysis Time Period	*PM Peak w/Peak Construction*	Project ID	*SVP Pico Power Project*

East/West Street: *Duane Avenue*	North/South Street: *Lafayette Street*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*63*	*0*	*233*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*63*	*0*	*233*	*0*	*0*	*0*
Percent Heavy Vehicles	*5*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration	*LTR*	*LR*				
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*62*	*355*	*0*	*0*	*1089*	*13*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*62*	*355*	*0*	*0*	*1089*	*13*
Percent Heavy Vehicles	*5*	*5*	*0*	*0*	*5*	*5*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*		*L*	*T*			*T*	*TR*
v (vph)	*63*		*62*	*355*			*544*	*557*
C (m) (vph)	*1604*		*0*	*628*			*541*	*547*
v/c	*0.04*			*0.57*			*1.01*	*1.02*
95% queue length	*0.12*			*3.80*			*29.33*	*31.51*
Control Delay	*7.3*			*18.1*			*126.5*	*139.1*
LOS	*A*		*F*	*C*			*F*	*F*
Approach Delay	--	--				*132.9*		
Approach LOS	--	--				*F*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Slusser*		
Agency/Co.	*Foster Wheeler Environmental*	Intersection	*Duane at Lafayette*
		Jurisdiction	*City of Santa Clara*
Date Performed	*7/1/02*	Analysis Year	*2002*
Analysis Time Period	*PM Peak w/Peak Operations*	Project ID	*SVP Pico Power Project*

East/West Street: *Duane Avenue*	North/South Street: *Lafayette Street*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*28*	*0*	*97*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*28*	*0*	*97*	*0*	*0*	*0*
Percent Heavy Vehicles	*5*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration	*LTR*	*LR*				
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*62*	*355*	*0*	*0*	*1089*	*13*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*62*	*355*	*0*	*0*	*1089*	*13*
Percent Heavy Vehicles	*5*	*5*	*0*	*0*	*5*	*5*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*

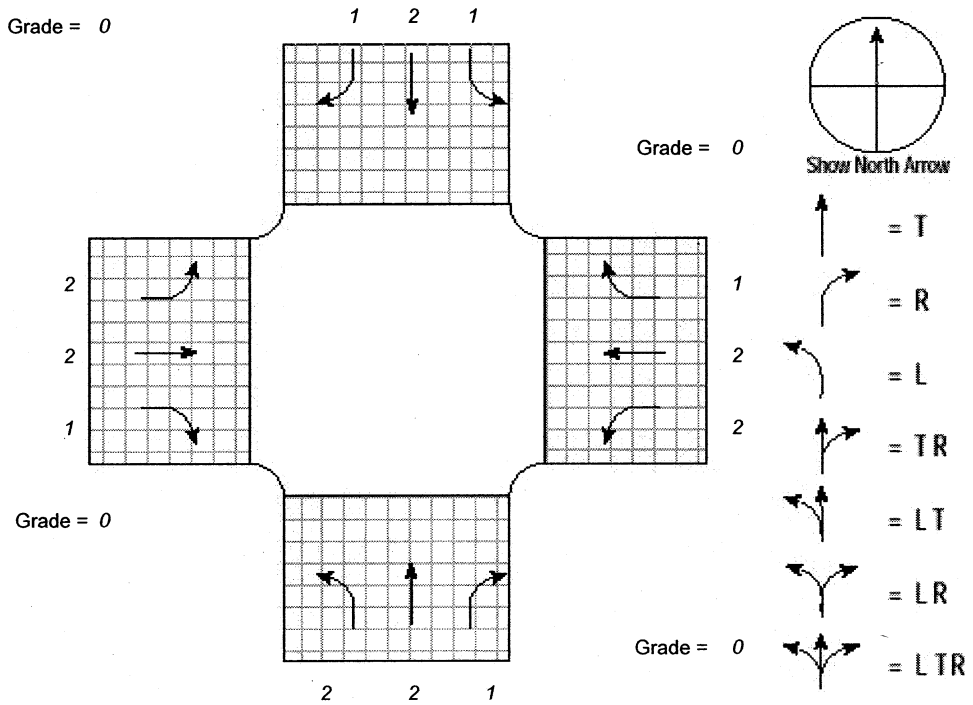
Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*		*L*	*T*			*T*	*TR*
v (vph)	*28*		*62*	*355*			*544*	*557*
C (m) (vph)	*1604*		*0*	*766*			*720*	*726*
v/c	*0.02*			*0.46*			*0.76*	*0.77*
95% queue length	*0.05*			*2.56*			*8.46*	*8.94*
Control Delay	*7.3*			*13.7*			*24.9*	*25.7*
LOS	*A*		*F*	*B*			*C*	*D*
Approach Delay	--	--				*25.3*		
Approach LOS	--	--				*D*		

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at Lafayette*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/9/02*	Jurisdiction	*Santa Clara County*
Time Period	*AM Peak Existing*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*301*	*814*	*99*	*237*	*632*	*184*	*272*	*709*	*204*	*128*	*300*	*133*
% Heavy veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Arrival type	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*
Ped volume	*0*			*0*			*0*			*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	Excl. Left	EB Only	Thru & RT	04	Excl. Left	NB Only	Thru & RT	08
Timing	G = *5.5*	G = *1.5*	G = *16.0*	G =	G = *5.8*	G = *0.6*	G = *14.6*	G =
	Y = *4.0*	Y =	Y = *4.0*	Y =	Y = *4.0*	Y =	Y = *4.0*	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *60.0*		

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HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at Lafayette
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/9/02
Jurisdiction: Santa Clara County
Analysis Time Period: AM Peak Existing
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: Lafayette Street

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	2	1	2	2	1	2	2	1	1	2	1
Volume	301	814	99	237	632	184	272	709	204	128	300	133
Parking		N			N			N			N	
Coord.		N			N			N			N	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	301	237	272	128
2. Opposing mainline volume	816	913	433	913
3. Number of exclusive LT lanes	2	2	2	1
Cross Product [2] * [1]	245616	216381	117776	116864
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.950
5. LT lane vol	164	129	148	135
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	99	184	204	133
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	116	216	240	156
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	814	632	709	300
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	2	2	2	2
14. Total approach volume	814	632	709	300
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	407	316	354	150
19. Critical lane volume	407	316	354	156

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	407	316	354	156
LT lane vol: [5]	164	129	148	135
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')	<		<	

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3a 3a

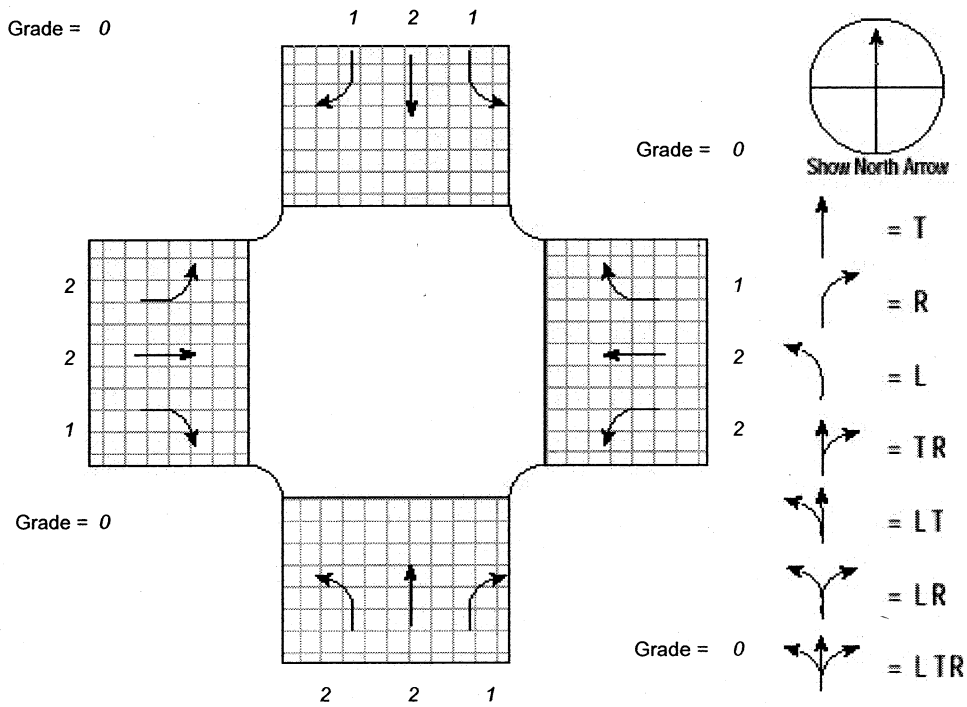
Min. cycle (Cmin) 60 Max. cycle (Cmax) 120

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	ETL	EWT	NSL	NTL	NST
Critical phase vol [CV]		129	35	372	135	13	341
Critical sum [CS]	1025						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	60.0						
Phase time		9.5	1.5	20.0	9.8	0.6	18.6
Critical v/c Ratio [Xcm]	0.91						
Status	Near capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at Lafayette*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/9/02*	Jurisdiction	*Santa Clara County*
Time Period	*AM Peak w/Peak Construction*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*375*	*814*	*99*	*237*	*632*	*258*	*272*	*709*	*204*	*128*	*300*	*133*
% Heavy veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Arrival type	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*
Ped volume	*0*			*0*			*0*			*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	Excl. Left	EB Only	Thru & RT	04	Excl. Left	NB Only	Thru & RT	08
Timing	G = *5.5*	G = *3.2*	G = *14.3*	G =	G = *5.8*	G = *0.6*	G = *14.6*	G =
	Y = *4.0*	Y =	Y = *4.0*	Y =	Y = *4.0*	Y =	Y = *4.0*	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *60.0*		

HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at Lafayette
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/9/02
Jurisdiction: Santa Clara County
Analysis Time Period: AM Peak w/Peak Construction
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: Lafayette Street

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	2	1	2	2	1	2	2	1	1	2	1
Volume	375	814	99	237	632	258	272	709	204	128	300	133
Parking		N			N			N			N	
Coord.		N			N			N			N	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	375	237	272	128
2. Opposing mainline volume	890	913	433	913
3. Number of exclusive LT lanes	2	2	2	1
Cross Product [2] * [1]	333750	216381	117776	116864
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.950
5. LT lane vol	204	129	148	135
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	99	258	204	133
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	116	304	240	156
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	814	632	709	300
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	2	2	2	2
14. Total approach volume	814	632	709	300
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	407	316	354	150
19. Critical lane volume	407	316	354	156

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	407	316	354	156
LT lane vol: [5]	204	129	148	135
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')	<		<	

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3a 3a

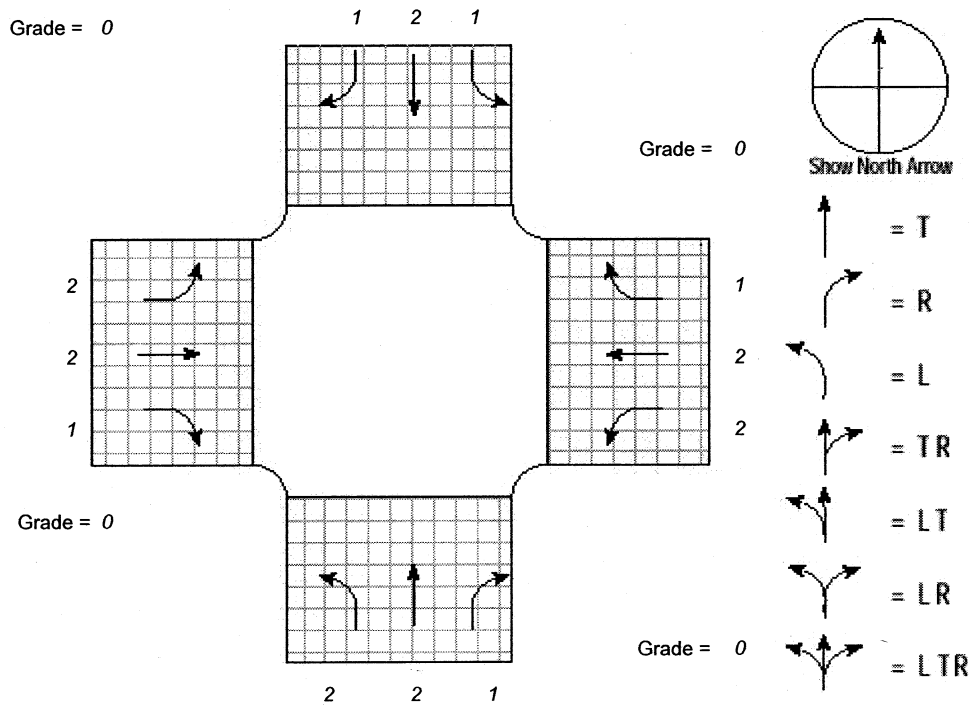
Min. cycle (Cmin) 60 Max. cycle (Cmax) 120

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	ETL	EWT	NSL	NTL	NST
Critical phase vol [CV]		129	75	332	135	13	341
Critical sum [CS]	1025						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	60.0						
Phase time		9.5	3.2	18.3	9.8	0.6	18.6
Critical v/c Ratio [Xcm]	0.91						
Status	Near capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at Lafayette*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/9/02*	Jurisdiction	*Santa Clara County*
Time Period	*AM Peak w/Peak Operations*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*307*	*814*	*99*	*237*	*632*	*190*	*272*	*709*	*204*	*128*	*300*	*133*
% Heavy veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Arrival type	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*
Ped volume	*0*			*0*			*0*			*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	Excl. Left	EB Only	Thru & RT	04	Excl. Left	NB Only	Thru & RT	08
Timing	G = *5.5*	G = *1.6*	G = *15.8*	G =	G = *5.8*	G = *0.6*	G = *14.6*	G =
	Y = *4.0*	Y =	Y = *4.0*	Y =	Y = *4.0*	Y =	Y = *4.0*	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *60.0*		

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HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at Lafayette
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/9/02
Jurisdiction: Santa Clara County
Analysis Time Period: AM Peak w/Peak Operations
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: Lafayette Street

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	2	1	2	2	1	2	2	1	1	2	1
Volume	307	814	99	237	632	190	272	709	204	128	300	133
Parking		N			N			N			N	
Coord.		N			N			N			N	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	307	237	272	128
2. Opposing mainline volume	822	913	433	913
3. Number of exclusive LT lanes	2	2	2	1
Cross Product [2] * [1]	252354	216381	117776	116864
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.950
5. LT lane vol	167	129	148	135
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	99	190	204	133
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	116	224	240	156
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	814	632	709	300
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	2	2	2	2
14. Total approach volume	814	632	709	300
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	407	316	354	150
19. Critical lane volume	407	316	354	156

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	407	316	354	156
LT lane vol: [5]	167	129	148	135
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')	<		<	

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3a 3a

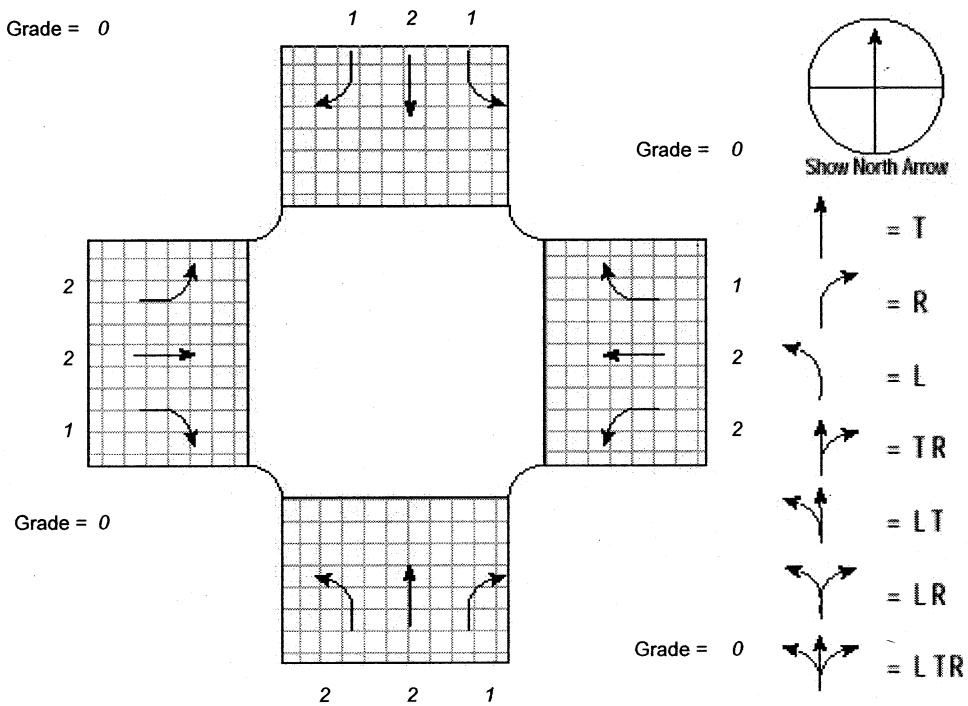
Min. cycle (Cmin) 60 Max. cycle (Cmax) 120

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	ETL	EWT	NSL	NTL	NST
Critical phase vol [CV]		129	38	369	135	13	341
Critical sum [CS]	1025						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	60.0						
Phase time		9.5	1.6	19.8	9.8	0.6	18.6
Critical v/c Ratio [Xcm]	0.91						
Status	Near capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at Lafayette*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/9/02*	Jurisdiction	*Santa Clara County*
Time Period	*PM Peak*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*157*	*1240*	*221*	*225*	*469*	*68*	*141*	*223*	*246*	*441*	*923*	*252*
% Heavy veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Arrival type	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*
Ped volume	*0*			*0*			*0*			*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	Excl. Left	WB Only	Thru & RT	04	Excl. Left	SB Only	Thru & RT	08
Timing	G = *9.3*	G = *0.1*	G = *68.0*	G =	G = *8.4*	G = *38.5*	G = *31.7*	G =
	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *180.0*		

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HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at Lafayette
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/9/02
Jurisdiction: Santa Clara County
Analysis Time Period: PM Peak
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: Lafayette Street

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	2	1	2	2	1	2	2	1	1	2	1
Volume	157	1240	221	225	469	68	141	223	246	441	923	252
Parking		N			N			N			N	
Coord.		N			N			N			N	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	157	225	141	441
2. Opposing mainline volume	537	1461	1175	469
3. Number of exclusive LT lanes	2	2	2	1
Cross Product [2] * [1]	84309	328725	165675	206829
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.950
5. LT lane vol	85	122	77	464
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	221	68	246	252
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	260	80	289	296
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	1240	469	223	923
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	2	2	2	2
14. Total approach volume	1240	469	223	923
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	620	234	112	462
19. Critical lane volume	620	234	289	462

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	620	234	289	462
LT lane vol: [5]	85	122	77	464
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')		<		<

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N
Phase plan selected (1 to 4)		3b		3b

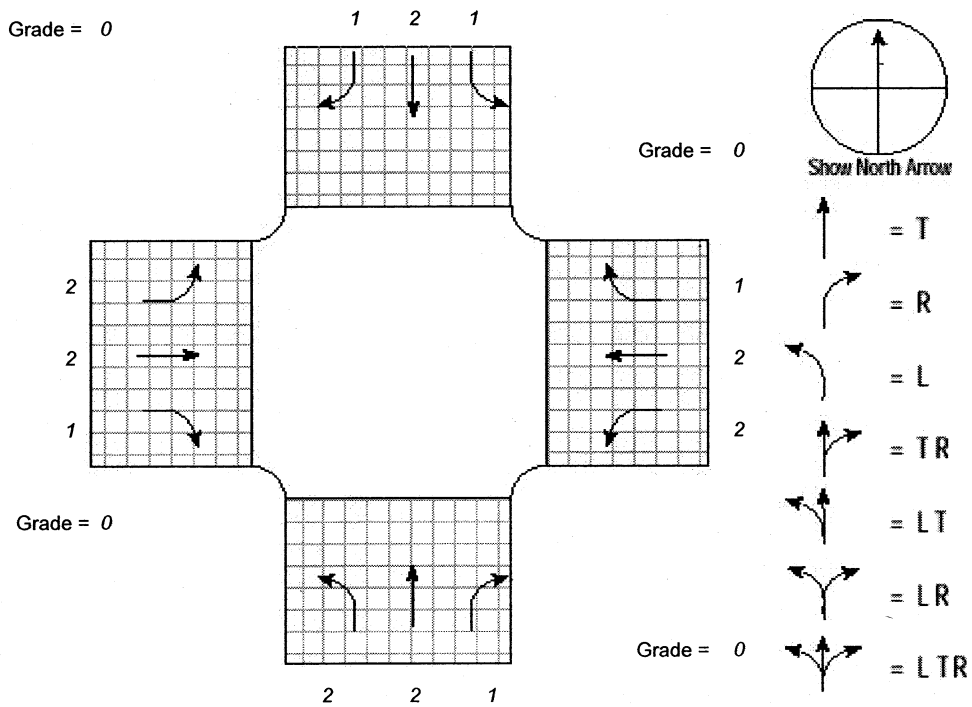
Min. cycle (Cmin) 120 Max. cycle (Cmax) 180

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	WTL	EWT	NSL	STL	NST
Critical phase vol [CV]		85	37	620	77	387	289
Critical sum [CS]	1495						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	180.0						
Phase time		13.3	4.1	72.0	12.4	42.5	35.7
Critical v/c Ratio [Xcm]	1.07						
Status	Over capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at Lafayette*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/19/02*	Jurisdiction	*Santa Clara County*
Time Period	*PM Peak w/ Peak Construction*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*157*	*1240*	*221*	*225*	*469*	*68*	*141*	*223*	*246*	*515*	*923*	*326*
% Heavy veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Arrival type	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*
Ped volume	*0*			*0*			*0*			*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	Excl. Left	WB Only	Thru & RT	04	Excl. Left	SB Only	Thru & RT	08
Timing	G = *8.9*	G = *3.9*	G = *64.6*	G =	G = *8.0*	G = *44.5*	G = *30.1*	G =
	Y = *4.0*	Y =	Y = *4.0*	Y =	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *180.0*		

HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone:
E-Mail:
Fax:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at Lafayette
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/19/02
Jurisdiction: Santa Clara County
Analysis Time Period: PM Peak w/ Peak Construction
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: Lafayette Street

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	2	1	2	2	1	2	2	1	1	2	1
Volume	157	1240	221	225	469	68	141	223	246	515	923	326
Parking		N			N			N			N	
Coord.		N			N			N			N	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	157	225	141	515
2. Opposing mainline volume	537	1461	1249	469
3. Number of exclusive LT lanes	2	2	2	1
Cross Product [2] * [1]	84309	328725	176109	241535
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.950
5. LT lane vol	85	122	77	542
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	221	68	246	326
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	260	80	289	384
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	1240	469	223	923
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	2	2	2	2
14. Total approach volume	1240	469	223	923
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	620	234	112	462
19. Critical lane volume	620	234	289	462

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	620	234	289	462
LT lane vol: [5]	85	122	77	542
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')		<		<

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 3b 3b

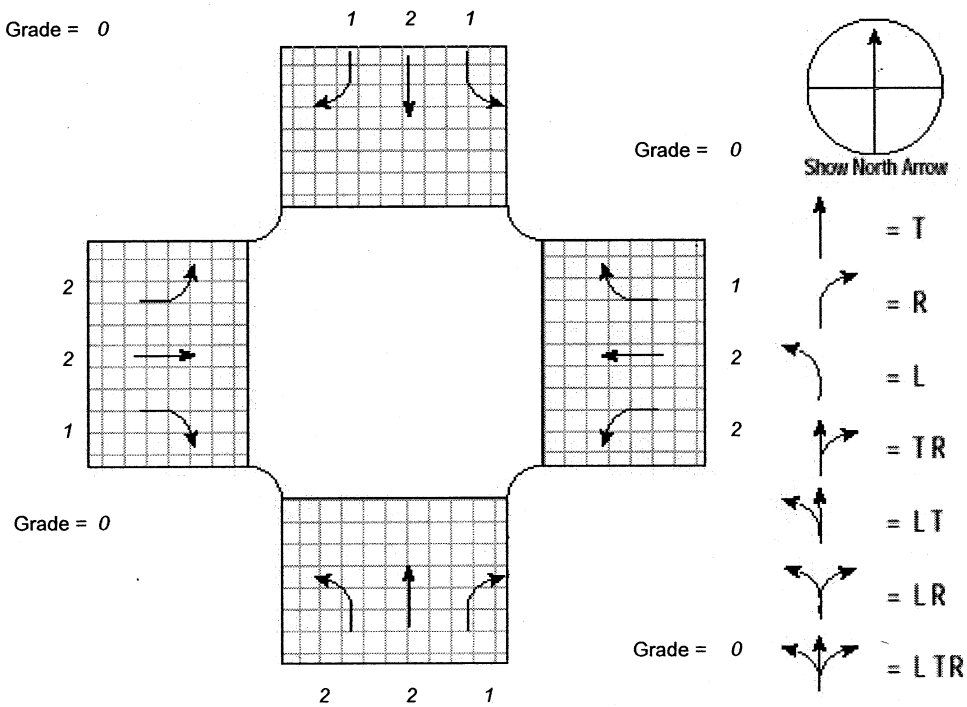
Min. cycle (Cmin) 120 Max. cycle (Cmax) 180

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	WTL	EWT	NSL	STL	NST
Critical phase vol [CV]		85	37	620	77	465	289
Critical sum [CS]	1573						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	180.0						
Phase time		12.9	3.9	68.6	12.0	48.5	34.1
Critical v/c Ratio [Xcm]	1.12						
Status	Over capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at Lafayette*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/19/02*	Jurisdiction	*Santa Clara County*
Time Period	*PM Peak w/ Peak Operation*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*157*	*1240*	*221*	*225*	*469*	*68*	*141*	*223*	*246*	*447*	*923*	*258*
% Heavy veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Arrival type	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*
Ped volume	*0*			*0*			*0*			*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	Excl. Left	WB Only	Thru & RT	04	Excl. Left	SB Only	Thru & RT	08
Timing	G = *9.3*	G = *0.0*	G = *67.7*	G =	G = *8.4*	G = *39.0*	G = *31.6*	G =
	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =	Y = *4.0*	Y = *4.0*	Y = *4.0*	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *180.0*		

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HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at Lafayette
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/19/02
Jurisdiction: Santa Clara County
Analysis Time Period: PM Peak w/ Peak Operation
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: Lafayette Street

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	2	1	2	2	1	2	2	1	1	2	1
Volume	157	1240	221	225	469	68	141	223	246	447	923	258
Parking		N			N			N			N	
Coord.		N			N			N			N	
LT Treat.	P			P			P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	157	225	141	447
2. Opposing mainline volume	537	1461	1181	469
3. Number of exclusive LT lanes	2	2	2	1
Cross Product [2] * [1]	84309	328725	166521	209643
Left Lane Configuration (E=Excl, S=Shrd):	E	E	E	E
Left Turn Treatment Type:	P	P	P	P
4. LT adjustment factor	0.920	0.920	0.920	0.950
5. LT lane vol	85	122	77	471
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E	E	E	E
6. RT volume	221	68	246	258
7. Exclusive lanes	1	1	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume	260	80	289	304
10. Shared lane vol				
THROUGH MOVEMENT				
11. Thru volume	1240	469	223	923
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	2	2	2	2
14. Total approach volume	1240	469	223	923
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				
18. Through lane volume	620	234	112	462
19. Critical lane volume	620	234	289	462

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	620	234	289	462
LT lane vol: [5]	85	122	77	471
Left turn protection: (P/U/N)	P	P	P	P
Dominant left turn: (Indicate by '<')		<		<

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N
Phase plan selected (1 to 4)		3b		3b

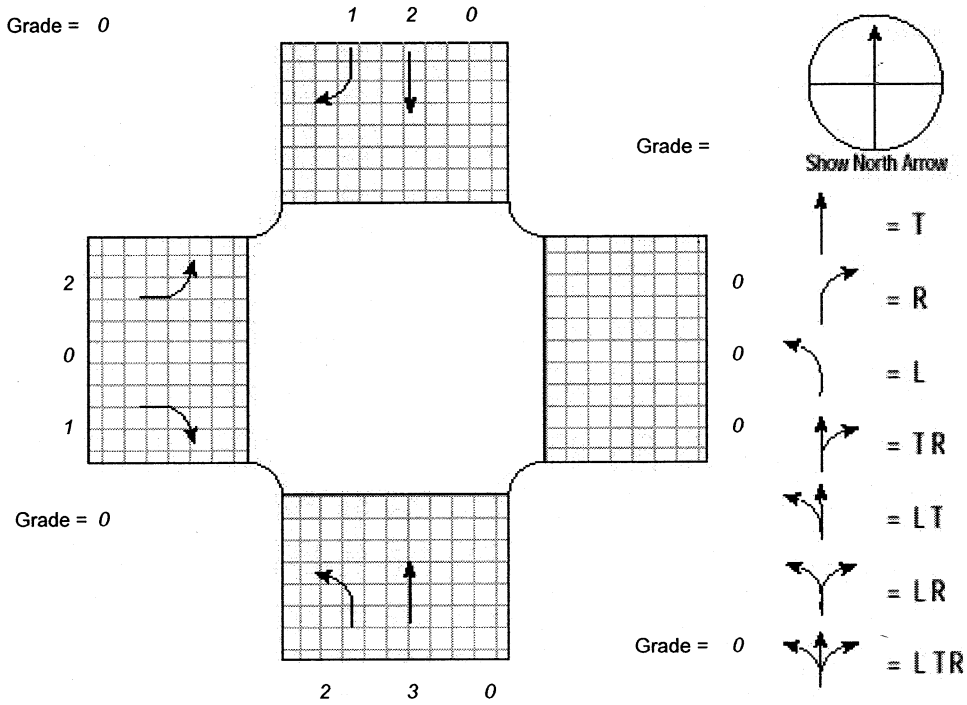
Min. cycle (Cmin) 120 Max. cycle (Cmax) 180

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWL	WTL	EWT	NSL	STL	NST
Critical phase vol [CV]		85	37	620	77	394	289
Critical sum [CS]	1502						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	4	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	180.0						
Phase time		13.3	4.0	71.7	12.4	43.0	35.6
Critical v/c Ratio [Xcm]	1.07						
Status	Over capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at De La Cruz*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*AM Peak Existing*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*1176*		*49*				*600*	*1412*			*718*	*837*
% Heavy veh	*2*		*2*				*2*	*2*			*2*	*2*
PHF	*0.90*		*0.90*				*0.90*	*0.90*			*0.90*	*0.90*
Actuated (P/A)	*P*		*P*				*P*	*P*			*P*	*P*
Startup lost time	*2.0*		*2.0*				*2.0*	*2.0*			*2.0*	*2.0*
Ext. eff. green	*2.0*		*2.0*				*2.0*	*2.0*			*2.0*	*2.0*
Arrival type	*3*		*3*				*3*	*3*			*3*	*3*
Ped volume	*0*			*0*						*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*		*0*				*0*	*0*			*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	EB Only	02	03	04	NB Only	Thru & RT	07	08
Timing	G = *40.4*	G =	G =	G =	G = *16.8*	G = *50.8*	G =	G =
	Y = *4.0*	Y =	Y =	Y =	Y = *4.0*	Y = *4.0*	Y =	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *120.0*		

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HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
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PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at De La Cruz
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/1/02
Jurisdiction: City of Santa Clara
Analysis Time Period: AM Peak Existing
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: De La Cruz Blvd

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	0	1	0	0	0	2	3	0	0	2	1
Volume	1176		49				600	1412	0	0	718	837
Parking		N						N			N	
Coord.		N						N			N	
LT Treat.	N						P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	1176		600	0
2. Opposing mainline volume	0		1555	1412
3. Number of exclusive LT lanes	2		2	0
Cross Product [2] * [1]	0		933000	0
Left Lane Configuration (E=Excl, S=Shrd):	E		E	S
Left Turn Treatment Type:	N		P	P
4. LT adjustment factor	0.750		0.920	
5. LT lane vol	784		326	0
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E		S	E
6. RT volume	49		0	837
7. Exclusive lanes	1		0	1
8. RT adjustment factor	0.850		0.850	0.850
9. Exclusive RT lane volume	58			985
10. Shared lane vol			0	
THROUGH MOVEMENT				
11. Thru volume	0		1412	718
12. Parking adjustment factor	1.00		1.00	1.00
13. No. of thru lanes including shared	0		3	2
14. Total approach volume	0		1412	718
15. Prop. of left turns in lane group	0.00		0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				1.000
18. Through lane volume	0		471	359
19. Critical lane volume	784		471	985

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	784		471	985
LT lane vol: [5]	784		326	0
Left turn protection: (P/U/N)	N		P	P
Dominant left turn: (Indicate by '<')				

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 1 2b

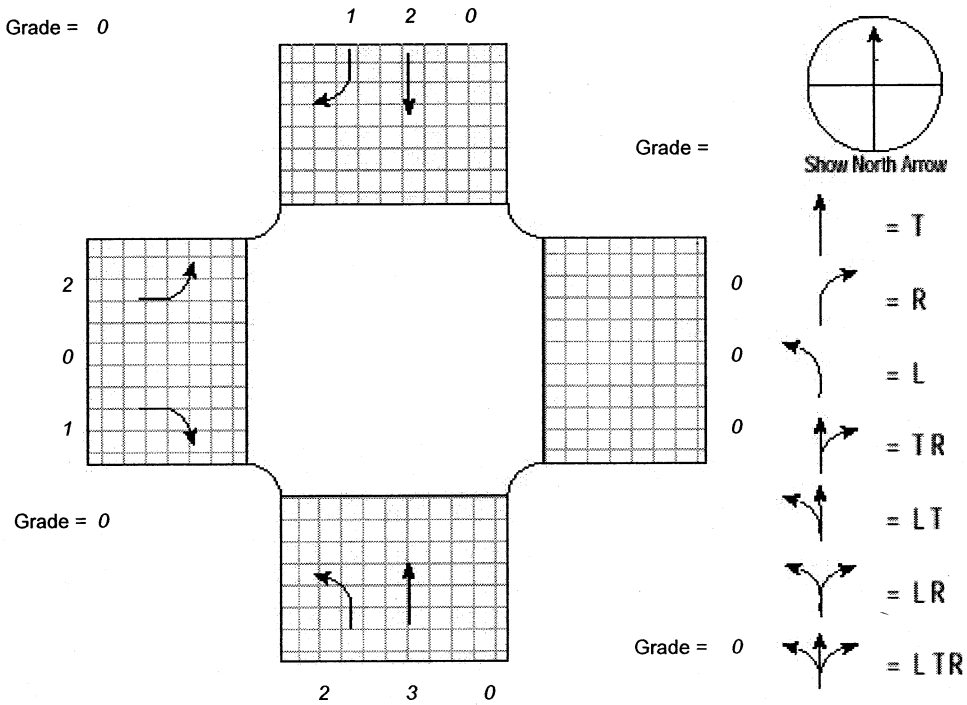
Min. cycle (Cmin) 60 Max. cycle (Cmax) 120

Timing Plan		EAST-WEST			NORTH-		SOUTH
	Value	Ph 1	Ph 2	Ph 3	Ph 1	Ph 2	Ph 3
Movement codes		EWT			NTL	NST	
Critical phase vol [CV]		784	0	0	326	985	0
Critical sum [CS]	2095						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	0	4	4	0
Lost time/cycle [TL]	12						
Cycle length [CYC]	120.0						
Phase time		44.4	0.0	0.0	20.8	54.8	0.0
Critical v/c Ratio [Xcm]	1.51						
Status	Over capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at De La Cruz*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*AM Peak w/Peak Construction*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*1176*		*49*				*615*	*1412*			*718*	*896*
% Heavy veh	*2*		*2*				*2*	*2*			*2*	*2*
PHF	*0.90*		*0.90*				*0.90*	*0.90*			*0.90*	*0.90*
Actuated (P/A)	*P*		*P*				*P*	*P*			*P*	*P*
Startup lost time	*2.0*		*2.0*				*2.0*	*2.0*			*2.0*	*2.0*
Ext. eff. green	*2.0*		*2.0*				*2.0*	*2.0*			*2.0*	*2.0*
Arrival type	*3*		*3*				*3*	*3*			*3*	*3*
Ped volume	*0*			*0*						*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*		*0*				*0*	*0*			*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	EB Only	02	03	04	NB Only	Thru & RT	07	08
Timing	G = *39.0*	G =	G =	G =	G = *16.6*	G = *52.4*	G =	G =
	Y = *4.0*	Y =	Y =	Y =	Y = *4.0*	Y = *4.0*	Y =	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *120.0*		

HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at De La Cruz
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/1/02
Jurisdiction: City of Santa Clara
Analysis Time Period: AM Peak w/Peak Construction
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: De La Cruz Blvd

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	0	1	0	0	0	2	3	0	0	2	1
Volume	1176		49				615	1412	0	0	718	896
Parking		N						N			N	
Coord.		N						N			N	
LT Treat.	N						P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	1176		615	0
2. Opposing mainline volume	0		1614	1412
3. Number of exclusive LT lanes	2		2	0
Cross Product [2] * [1]	0		992610	0
Left Lane Configuration (E=Excl, S=Shrd):	E		E	S
Left Turn Treatment Type:	N		P	P
4. LT adjustment factor	0.750		0.920	
5. LT lane vol	784		334	0
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E		S	E
6. RT volume	49		0	896
7. Exclusive lanes	1		0	1
8. RT adjustment factor	0.850		0.850	0.850
9. Exclusive RT lane volume	58			1054
10. Shared lane vol			0	
THROUGH MOVEMENT				
11. Thru volume	0		1412	718
12. Parking adjustment factor	1.00		1.00	1.00
13. No. of thru lanes including shared	0		3	2
14. Total approach volume	0		1412	718
15. Prop. of left turns in lane group	0.00		0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				1.000
18. Through lane volume	0		471	359
19. Critical lane volume	784		471	1054

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	784		471	1054
LT lane vol: [5]	784		334	0
Left turn protection: (P/U/N)	N		P	P
Dominant left turn: (Indicate by '<')				

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 1 2b

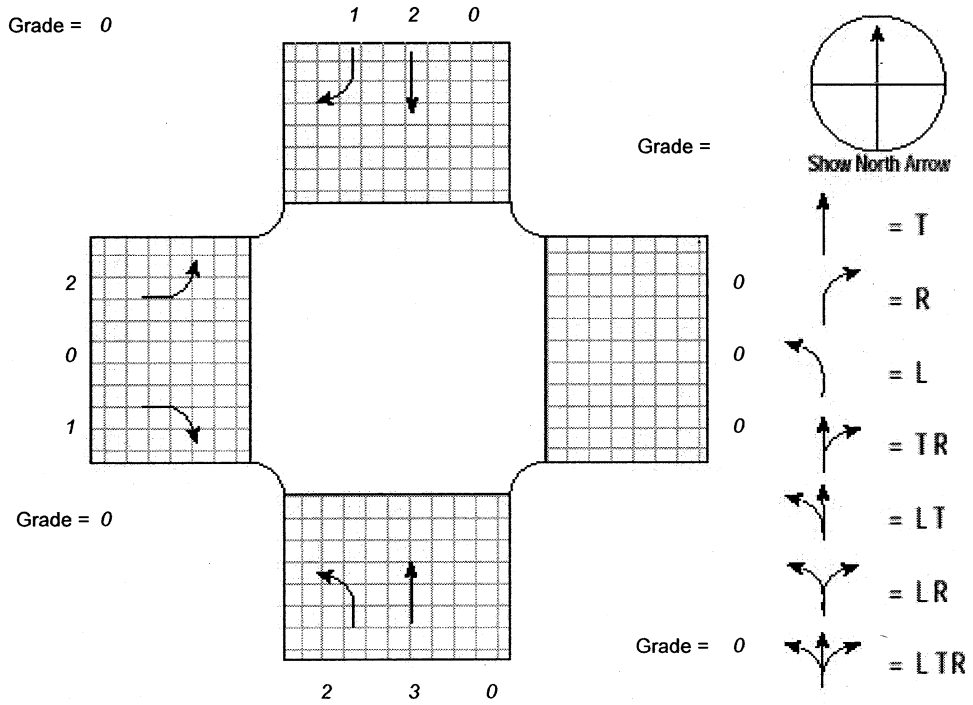
Min. cycle (Cmin) 60 Max. cycle (Cmax) 120

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWT			NTL	NST	
Critical phase vol [CV]		784	0	0	334	1054	0
Critical sum [CS]	2172						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	0	4	4	0
Lost time/cycle [TL]	12						
Cycle length [CYC]	120.0						
Phase time		43.0	0.0	0.0	20.6	56.4	0.0
Critical v/c Ratio [Xcm]	1.57						
Status	Over capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at De La Cruz*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*AM Peak w/Peak Operations*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*1176*		*49*				*601*	*1412*			*718*	*842*
% Heavy veh	*2*		*2*				*2*	*2*			*2*	*2*
PHF	*0.90*		*0.90*				*0.90*	*0.90*			*0.90*	*0.90*
Actuated (P/A)	*P*		*P*				*P*	*P*			*P*	*P*
Startup lost time	*2.0*		*2.0*				*2.0*	*2.0*			*2.0*	*2.0*
Ext. eff. green	*2.0*		*2.0*				*2.0*	*2.0*			*2.0*	*2.0*
Arrival type	*3*		*3*				*3*	*3*			*3*	*3*
Ped volume	*0*			*0*						*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*		*0*				*0*	*0*			*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	EB Only	02	03	04	NB Only	Thru & RT	07	08
Timing	G = *40.3*	G =	G =	G =	G = *16.8*	G = *50.9*	G =	G =
	Y = *4.0*	Y =	Y =	Y =	Y = *4.0*	Y = *4.0*	Y =	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *120.0*		

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HCS2000: Signalized Intersections Release 4.1

Science Dept
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Phone: Fax:
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PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at De La Cruz
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/1/02
Jurisdiction: City of Santa Clara
Analysis Time Period: AM Peak w/Peak Operations
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: De La Cruz Blvd

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	0	1	0	0	0	2	3	0	0	2	1
Volume	1176		49				601	1412	0	0	718	842
Parking		N						N			N	
Coord.		N						N			N	
LT Treat.	N						P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	1176		601	0
2. Opposing mainline volume	0		1560	1412
3. Number of exclusive LT lanes	2		2	0
Cross Product [2] * [1]	0		937560	0
Left Lane Configuration (E=Excl, S=Shrd):	E		E	S
Left Turn Treatment Type:	N		P	P
4. LT adjustment factor	0.750		0.920	
5. LT lane vol	784		327	0
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E		S	E
6. RT volume	49		0	842
7. Exclusive lanes	1		0	1
8. RT adjustment factor	0.850		0.850	0.850
9. Exclusive RT lane volume	58			991
10. Shared lane vol			0	
THROUGH MOVEMENT				
11. Thru volume	0		1412	718
12. Parking adjustment factor	1.00		1.00	1.00
13. No. of thru lanes including shared	0		3	2
14. Total approach volume	0		1412	718
15. Prop. of left turns in lane group	0.00		0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				1.000
18. Through lane volume	0		471	359
19. Critical lane volume	784		471	991

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	784		471	991
LT lane vol: [5]	784		327	0
Left turn protection: (P/U/N)	N		P	P
Dominant left turn: (Indicate by '<')				

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 1 2b

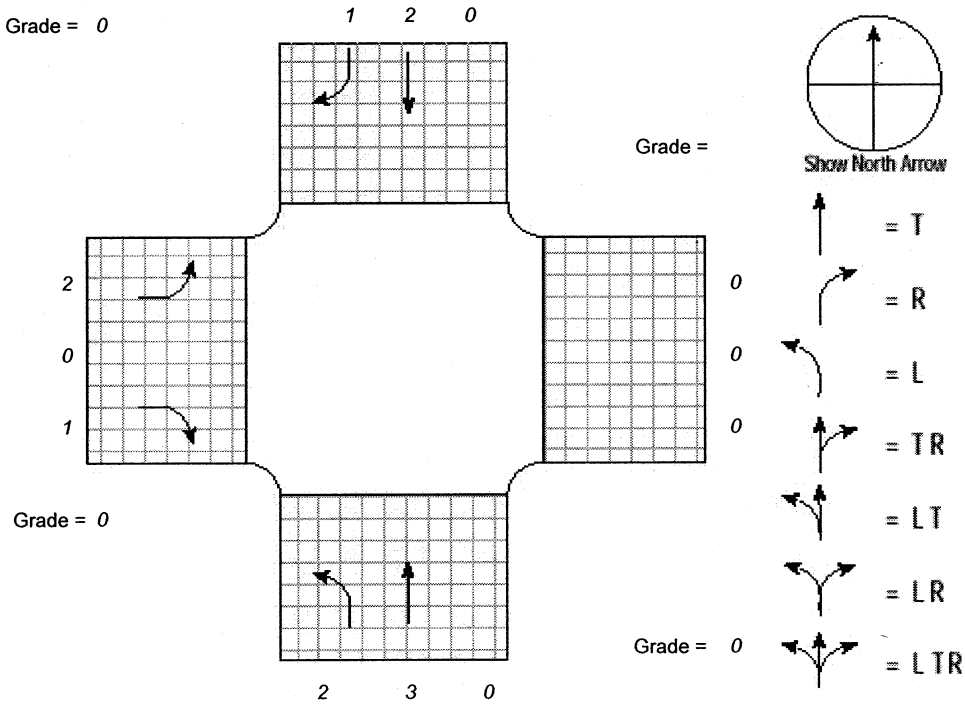
Min. cycle (Cmin) 60 Max. cycle (Cmax) 120

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWT			NTL	NST	
Critical phase vol [CV]		784	0	0	327	991	0
Critical sum [CS]	2102						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	0	4	4	0
Lost time/cycle [TL]	12						
Cycle length [CYC]	120.0						
Phase time		44.3	0.0	0.0	20.8	54.9	0.0
Critical v/c Ratio [Xcm]	1.52						
Status	Over capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at De La Cruz*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*PM Peak Existing*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*1432*		*469*				*182*	*830*			*1508*	*725*
% Heavy veh	*2*		*2*				*2*	*2*			*2*	*2*
PHF	*0.90*		*0.90*				*0.90*	*0.90*			*0.90*	*0.90*
Actuated (P/A)	*P*		*P*				*P*	*P*			*P*	*P*
Startup lost time	*2.0*		*2.0*				*2.0*	*2.0*			*2.0*	*2.0*
Ext. eff. green	*2.0*		*2.0*				*2.0*	*2.0*			*2.0*	*2.0*
Arrival type	*3*		*3*				*3*	*3*			*3*	*3*
Ped volume	*0*			*0*						*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*		*0*				*0*	*0*			*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	EB Only	02	03	04	NB Only	Thru & RT	07	08
Timing	G = *84.1*	G =	G =	G =	G = *8.7*	G = *75.1*	G =	G =
	Y = *4.0*	Y =	Y =	Y =	Y = *4.0*	Y = *4.0*	Y =	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *180.0*		

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HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at De La Cruz
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/1/02
Jurisdiction: City of Santa Clara
Analysis Time Period: PM Peak Existing
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: De La Cruz Blvd

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	0	1	0	0	0	2	3	0	0	2	1
Volume	1432		469				182	830	0	0	1508	725
Parking		N						N			N	
Coord.		N						N			N	
LT Treat.	N						P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	1432		182	0
2. Opposing mainline volume	0		2233	830
3. Number of exclusive LT lanes	2		2	0
Cross Product [2] * [1]	0		406406	0
Left Lane Configuration (E=Excl, S=Shrd):	E		E	S
Left Turn Treatment Type:	N		P	P
4. LT adjustment factor	0.750		0.920	
5. LT lane vol	955		99	0
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E		S	E
6. RT volume	469		0	725
7. Exclusive lanes	1		0	1
8. RT adjustment factor	0.850		0.850	0.850
9. Exclusive RT lane volume	552			853
10. Shared lane vol			0	
THROUGH MOVEMENT				
11. Thru volume	0		830	1508
12. Parking adjustment factor	1.00		1.00	1.00
13. No. of thru lanes including shared	0		3	2
14. Total approach volume	0		830	1508
15. Prop. of left turns in lane group	0.00		0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				1.000
18. Through lane volume	0		277	754
19. Critical lane volume	955		277	853

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	955		277	853
LT lane vol: [5]	955		99	0
Left turn protection: (P/U/N)	N		P	P
Dominant left turn: (Indicate by '<')				

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 1 2b

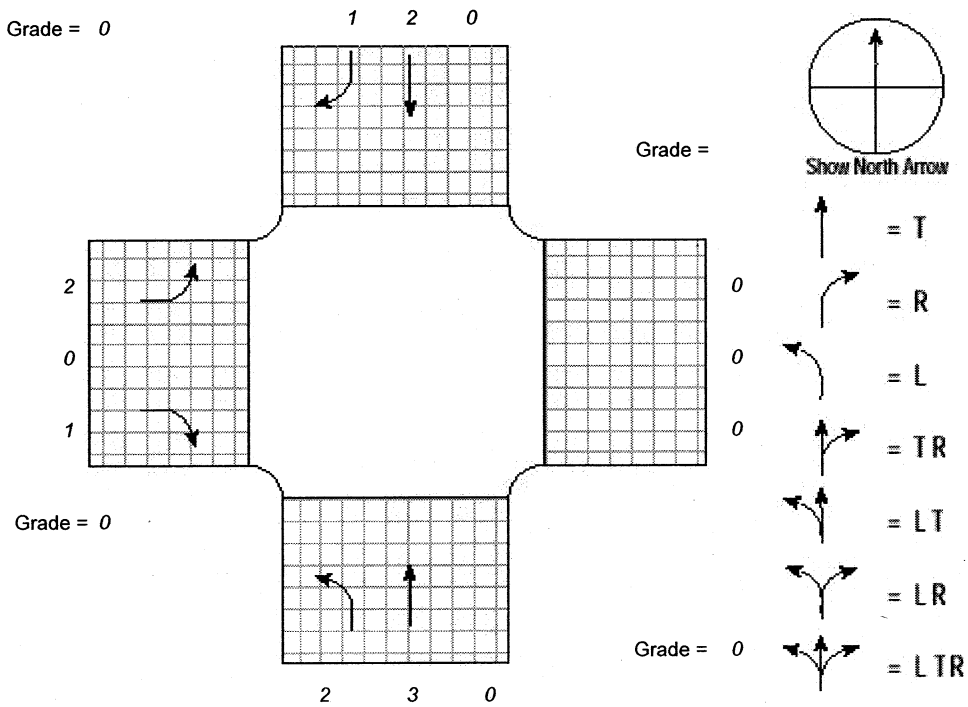
Min. cycle (Cmin) 120 Max. cycle (Cmax) 180

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWT			NTL	NST	
Critical phase vol [CV]		955	0	0	99	853	0
Critical sum [CS]	1907						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	0	4	4	0
Lost time/cycle [TL]	12						
Cycle length [CYC]	180.0						
Phase time		88.1	0.0	0.0	12.7	79.1	0.0
Critical v/c Ratio [Xcm]	1.33						
Status	Over capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at De La Cruz*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*PM Peak w/Peak Construction*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*1491*		*484*				*182*	*830*			*1508*	*725*
% Heavy veh	*2*		*2*				*2*	*2*			*2*	*2*
PHF	*0.90*		*0.90*				*0.90*	*0.90*			*0.90*	*0.90*
Actuated (P/A)	*P*		*P*				*P*	*P*			*P*	*P*
Startup lost time	*2.0*		*2.0*				*2.0*	*2.0*			*2.0*	*2.0*
Ext. eff. green	*2.0*		*2.0*				*2.0*	*2.0*			*2.0*	*2.0*
Arrival type	*3*		*3*				*3*	*3*			*3*	*3*
Ped volume	*0*			*0*						*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*		*0*				*0*	*0*			*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	EB Only	02	03	04	NB Only	Thru & RT	07	08
Timing	G = *55.2*	G =	G =	G =	G = *5.5*	G = *47.3*	G =	G =
	Y = *4.0*	Y =	Y =	Y =	Y = *4.0*	Y = *4.0*	Y =	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *120.0*		

HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at De La Cruz
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/1/02
Jurisdiction: City of Santa Clara
Analysis Time Period: PM Peak w/Peak Construction
Analysis Year: 2002
Project ID: SVP Pico Power Project
East/West Street: Central Expressway
North/South Street: De La Cruz Blvd

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	0	1	0	0	0	2	3	0	0	2	1
Volume	1491		484				182	830	0	0	1508	725
Parking		N						N			N	
Coord.		N						N			N	
LT Treat.	N						P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	1491		182	0
2. Opposing mainline volume	0		2233	830
3. Number of exclusive LT lanes	2		2	0
Cross Product [2] * [1]	0		406406	0
Left Lane Configuration (E=Excl, S=Shrd):	E		E	S
Left Turn Treatment Type:	N		P	P
4. LT adjustment factor	0.750		0.920	
5. LT lane vol	994		99	0
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E		S	E
6. RT volume	484		0	725
7. Exclusive lanes	1		0	1
8. RT adjustment factor	0.850		0.850	0.850
9. Exclusive RT lane volume	569			853
10. Shared lane vol			0	
THROUGH MOVEMENT				
11. Thru volume	0		830	1508
12. Parking adjustment factor	1.00		1.00	1.00
13. No. of thru lanes including shared	0		3	2
14. Total approach volume	0		830	1508
15. Prop. of left turns in lane group	0.00		0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				1.000
18. Through lane volume	0		277	754
19. Critical lane volume	994		277	853

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Phase Plan Selection from Lane Volume Worksheet				
Critical through-RT vol: [19]	994		277	853
LT lane vol: [5]	994		99	0
Left turn protection: (P/U/N)	N		P	P
Dominant left turn: (Indicate by '<')				

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 1 2b

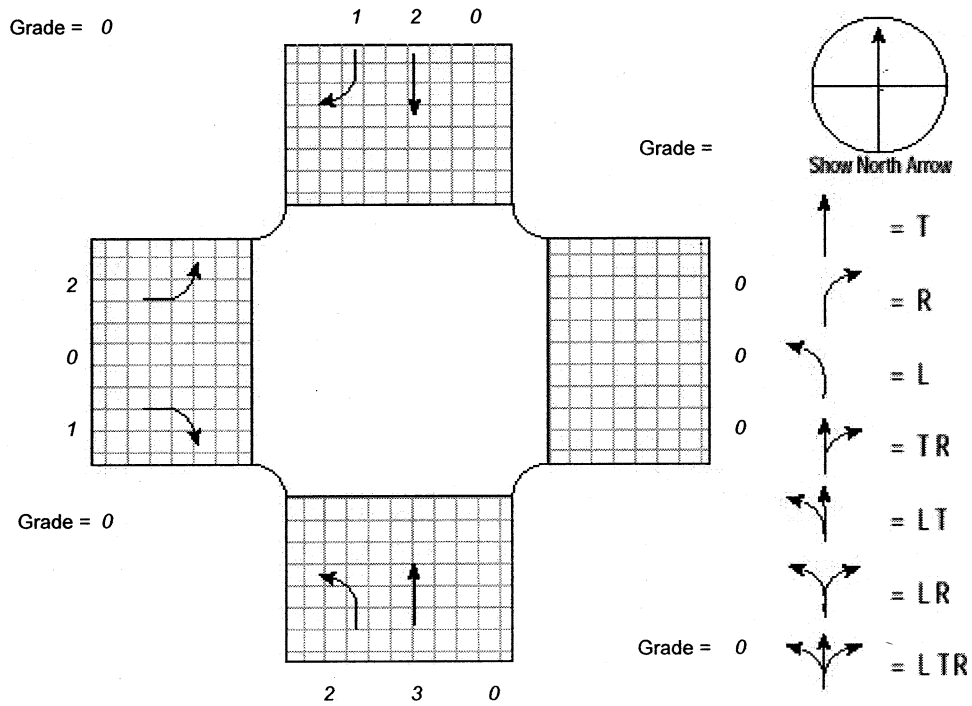
Min. cycle (Cmin) 60 Max. cycle (Cmax) 120

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWT			NTL	NST	
Critical phase vol [CV]		994	0	0	99	853	0
Critical sum [CS]	1946						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	0	4	4	0
Lost time/cycle [TL]	12						
Cycle length [CYC]	120.0						
Phase time		59.2	0.0	0.0	9.5	51.3	0.0
Critical v/c Ratio [Xcm]	1.40						
Status	Over capacity						

INPUT WORKSHEET

General Information		Site Information	
Analyst	*Slusser*	Intersection	*Central at De La Cruz*
Agency or Co.	*Foster Wheeler Environmental*	Area Type	*All other areas*
Date Performed	*7/1/02*	Jurisdiction	*City of Santa Clara*
Time Period	*PM Peak w/Peak Operations*	Analysis Year	*2002*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*1437*		*470*				*182*	*830*			*1508*	*725*
% Heavy veh	*2*		*2*				*2*	*2*			*2*	*2*
PHF	*0.90*		*0.90*				*0.90*	*0.90*			*0.90*	*0.90*
Actuated (P/A)	*P*		*P*				*P*	*P*			*P*	*P*
Startup lost time	*2.0*		*2.0*				*2.0*	*2.0*			*2.0*	*2.0*
Ext. eff. green	*2.0*		*2.0*				*2.0*	*2.0*			*2.0*	*2.0*
Arrival type	*3*		*3*				*3*	*3*			*3*	*3*
Ped volume	*0*			*0*						*0*		
Bicycle volume												
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*		*0*				*0*	*0*			*0*	*0*
Ped timing	*0.0*			*0.0*			*3.0*			*0.0*		

	EB Only	02	03	04	NB Only	Thru & RT	07	08
Timing	G = *54.2*	G =	G =	G =	G = *5.6*	G = *48.2*	G =	G =
	Y = *4.0*	Y =	Y =	Y =	Y = *4.0*	Y = *4.0*	Y =	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *120.0*		

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HCS2000: Signalized Intersections Release 4.1

Science Dept
FWENC

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Slusser
Intersection: Central at De La Cruz
Agency/Co.: Foster Wheeler Environmental
Area Type: All other areas
Date Performed: 7/1/02
Jurisdiction: City of Santa Clara
Analysis Time Period: PM Peak w/Peak Operations
Analysis Year: 2002
Project ID: SVP Pico Power Project

East/West Street	North/South Street
Central Expressway	De La Cruz Blvd

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	0	1	0	0	0	2	3	0	0	2	1
Volume	1437		470				182	830	0	0	1508	725
Parking		N						N			N	
Coord.		N						N			N	
LT Treat.	N						P			P		

Peak hour factor: 0.90 Area Type: All other areas

LANE VOLUME

WORKSHEET

	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
LEFT TURN MOVEMENT				
1. LT volume	1437		182	0
2. Opposing mainline volume	0		2233	830
3. Number of exclusive LT lanes	2		2	0
Cross Product [2] * [1]	0		406406	0
Left Lane Configuration (E=Excl, S=Shrd):	E		E	S
Left Turn Treatment Type:	N		P	P
4. LT adjustment factor	0.750		0.920	
5. LT lane vol	958		99	0
RIGHT TURN MOVEMENT				
Right Lane Configuration (E=Excl, S=Shrd)	E		S	E
6. RT volume	470		0	725
7. Exclusive lanes	1		0	1
8. RT adjustment factor	0.850		0.850	0.850
9. Exclusive RT lane volume	553			853
10. Shared lane vol			0	
THROUGH MOVEMENT				
11. Thru volume	0		830	1508
12. Parking adjustment factor	1.00		1.00	1.00
13. No. of thru lanes including shared	0		3	2
14. Total approach volume	0		830	1508
15. Prop. of left turns in lane group	0.00		0.00	0.00
16. Left turn equivalence				
17. LT adj. factor:				1.000
18. Through lane volume	0		277	754
19. Critical lane volume	958		277	853

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:
7200/Cmax

SIGNAL OPERATIONS
WORKSHEET

Phase Plan Selection from Lane Volume Worksheet	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Critical through-RT vol: [19]	958		277	853
LT lane vol: [5]	958		99	0
Left turn protection: (P/U/N)	N		P	P
Dominant left turn: (Indicate by '<')				

Selection Criteria based on the specified left turn protection

< Indicates the dominant left turn for each opposing pair

Plan 1:	U	U	U	U
Plan 2a:	U	P	U	P
Plan 2b:	P	U	P	U
Plan 3a:	<P	P	<P	P
Plan 3b:	P	<P	P	<P
Plan 4:	N	N	N	N

Phase plan selected (1 to 4) 1 2b

Min. cycle (Cmin) 60 Max. cycle (Cmax) 120

Timing Plan	Value	EAST-WEST Ph 1	EAST-WEST Ph 2	EAST-WEST Ph 3	NORTH-SOUTH Ph 1	NORTH-SOUTH Ph 2	NORTH-SOUTH Ph 3
Movement codes		EWT			NTL	NST	
Critical phase vol [CV]		958	0	0	99	853	0
Critical sum [CS]	1910						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1539						
Lost time/phase [PL]		4	0	0	4	4	0
Lost time/cycle [TL]	12						
Cycle length [CYC]	120.0						
Phase time		58.2	0.0	0.0	9.6	52.2	0.0
Critical v/c Ratio [Xcm]	1.38						
Status	Over capacity						