

## SFMTA - TASC SUMMARY SHEET

<b>PreStaff_Date:</b> 11/24/2020 <b>Requested_by:</b> SFMTA <b>Handled:</b> Eric Luu, 646-4311 <i>GD</i> <b>Section Head :</b> Bryant Woo <i>(Signature)</i>	<input type="checkbox"/> <b>Public Hearing Consent</b> <input checked="" type="checkbox"/> <b>Public Hearing Regular</b> <input type="checkbox"/> <b>Informational / Other</b> <small>PH - Regular</small>	<b>No objections:</b> _____ <b>Item Held:</b> _____ <b>Other:</b> _____
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**Location:** Cesar Chavez Street and Guerrero Street

**Subject:** No left turn

**PROPOSAL / REQUEST:**  
 ESTABLISH – NO LEFT TURN  
 Cesar Chavez Street, eastbound, at Guerrero Street

(Supervisor Districts 8 and 9)

Proposal to restrict eastbound left turns to accommodate increased north side pedestrian crossing times as part of traffic signal retiming effort.

Eric Luu, eric.luu@sfmta.com

**BACKGROUND INFORMATION / COMMENTS**

Resident request to increase crossing times. In conjunction with system retiming to WS3.0.

Guerrero Street PH Vol = 2,038 (AM) / 1,937 (PM) Veh  
 Cesar Chavez Street PH Vol = 1,119 (AM) / 1,331 (PM) Veh  
 Cesar Chavez EBL PH Vol = 13 (AM) / 15 (PM) Veh

No Muni routes travel through intersection.

<b>HEARING NOTIFICATION AND PROCESSING NOTES:</b>	<b>ENVIRONMENTAL CLEARANCE BY:</b> <input checked="" type="checkbox"/> SFMTA <input type="checkbox"/> Attached <input type="checkbox"/> Pending
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**CHECK IF PREPARING SEPARATE SFMTA BOARD CALENDAR ITEM FOR PROPOSAL:**

**EXISTING TIMING**

**Cesar Chavez and Guerrero**  
 CHANGE: 27  
 CNN #: 21897000  
 ENGINEER: Corbin Skerrit  
 5/22/2017  
 Programmed by: *JA*  
 Installed by: *JA*  
 11:10  
 Date Completed: *8-30-17*

DESCRIPTION: Update Y, AR, W, and FRH

NOTES: page 1 of 2; clock reset time = 4 AM

PHASE	STREET	EmerFlash	ProgFlash	Controller:	2070
1	C. Chavez WBLT	--	--	Cabinet	M-SF
2	Cesar Chavez EB	R	--	Oper. Date:	1/3/1949
4	Guerrero SB	R	--	System:	Cesar Chavez
6	Cesar Chavez WB	R	--	Master:	TBC-GPS
8	Guerrero NB	R	--	Cascade:	n/a
13	Guerrero NBRT	--	--		

**ATTACHMENTS**

Base Timing       Actuation       Transit Priority       Preemption

**Steady Demand Sequence**

X = YES	-- = NO	S	M	T	W	T	F	S	CYCLE	SPLIT	OFFSET	FLASH
6:30 to 10:00		--	X	X	X	X	X	--	2	1	2	--
16:00 to 19:00		--	X	X	X	X	X	--	3	1	3	--
ALL OTHER TIMES		X	X	X	X	X	X	X	1	1	1	--

STREET	PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C. Chavez WBLT	1	OFF			G			OFF								
Cesar Chavez EB	2	G+G		Y	R											
Guerrero SB	4	R					G		Y	R						
Cesar Chavez WB	6	R			G		Y	R								
Guerrero NB	8	R					G		Y	R						
Guerrero NBRT	13	OFF			G			Y	OFF							
Peds Xing Guerrero SS	2P		FRH		RH											
Peds Xing Cesar Chavez WS	4P	RH						FRH		RH						
Peds Xing Guerrero NS	6P	RH				FRH		RH								
Peds Xing Cesar Chavez ES	8P	RH						FRH		RH						

CSO	CYCLE (seconds)	OFFSET (seconds)	SIGNAL INTERVALS (seconds)														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
111	75.0	47	4.0	17.0	4.0	2.0	4.0	13.0	4.0	2.0	4.0	1.0	14.0	4.0	2.0		
212	90.0	1	4.0	17.0	4.0	2.0	6.0	13.0	4.0	2.0	17.0	1.0	14.0	4.0	2.0		
313	90.0	23	4.0	17.0	4.0	2.0	12.0	13.0	4.0	2.0	11.0	1.0	14.0	4.0	2.0		

Cesar Chavez and Guerrero

CHANGE 27

**PROPOSED TIMING**

**Cesar Chavez and Guerrero**

**Cesar Chavez and Guerrero**

CHANGE: 28  
 CNN #: 21897000  
 ENGINEER: E. Luu  
 Revision Date: 10/30/2020  
 Programmed by:  
 Installed by:  
 Date Completed:

DESCRIPTION: Increase Dial 111 to 80s and Dials 212 & 313 to 106s; Update Offsets. Add Phase 1 WBL Y & R arrows. Remove Phase 2 EBL. Update to WS 3.0: Splits, Min/Max G, All R, Min Walk, FRH, Transition Parameters.

NOTES: Clock reset time = 4 AM

Page 1 of 3

PHASE	STREET	EmerFlash	ProgFlash	Controller:	
1	C Chavez WBL		--	2070	
2	C Chavez EB	R	--	Cabinet	M-SF
4	Guerrero SB	R	--	Oper. Date:	1/3/1949
6	C Chavez WB	R	--	System:	Cesar Chavez
8	Guerrero NB	R	--	Master:	TBC-GPS to
13	Guerrero NBR	--	--		Cesar Chavez & South Van Ness

**ATTACHMENTS**

Actuation     
  Transit Priority     
  Preemption

**Steady Demand Sequence**

X = YES	-- = NO	S	M	T	W	T	F	S	CYCLE	SPLIT	OFFSET	FLASH
6:30 to 10:00	--	X	X	X	X	X	X	--	2	1	2	--
16:00 to 19:00	--	X	X	X	X	X	X	--	3	1	3	--
ALL OTHER TIMES		X	X	X	X	X	X	X	1	1	1	--

STREET	PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
C Chavez WBL	1	<R			<G	<Y	<R											
C Chavez EB	2	G	Y	R														
Guerrero SB	4	R							G	Y	R							
C Chavez WB	6	G					Y	R										
Guerrero NB	8	R							G	Y	R							
Guerrero NBR	13	OFF					G>	Y>	OFF									
Ped Xing Guerrero SS	2P	FRH	RH															
Ped Xing C Chavez WS	4P	RH							FRH	RH								
Ped Xing Guerrero NS	6P	FRH	RH					RH										
Ped Xing C Chavez ES	8P	RH							FRH	RH								

ws3.0

CSO	CYCLE (seconds)	OFFSET (seconds)	SIGNAL INTERVALS (seconds)														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
111	80.0	45	4.0	22.0	2.0	2.0	2.0	14.0	4.0	2.0	6.5	1.0	14.0	4.0	2.5		
212	106.0	103	4.0	22.0	3.0	1.0	2.0	15.0	4.0	2.0	31.5	1.0	14.0	4.0	2.5		
313	106.0	63	See Page 2 for Dial 313														

**CHANGE 28**

# PROPOSED TIMING

## Cesar Chavez and Guerrero

DESCRIPTION: Increase Dial 111 to 80s and Dials 212 & 313 to 106s; Update Offsets. Add Phase 1 WBL Y & R arrows. Remove Phase 2 EBL. Update to WS 3.0: Splits, Min/Max G, All R, Min Walk, FRH, Transition Parameters.

CHANGE: 28  
 CNN #: 21897000  
 ENGINEER: E. Luu  
 Revision Date: 10/30/2020  
 Programmed by:  
 Installed by:  
 Date Completed:

NOTES: Clock reset time = 4 AM

Page 2 of 3

PHASE	STREET	EmerFlash	ProgFlash	Controller:	2070
1	C Chavez WBL		--	Cabinet	M-SF
2	C Chavez EB	R	--	Oper. Date:	1/3/1949
4	Guerrero SB	R	--	System:	Cesar Chavez
6	C Chavez WB	R	--	Master:	TBC-GPS to
8	Guerrero NB	R	--		Cesar Chavez &
13	Guerrero NBR	--	--		South Van Ness

### ATTACHMENTS

Actuation     
  Transit Priority     
  Preemption

### Steady Demand Sequence

X = YES	-- = NO	S	M	T	W	T	F	S	CYCLE	SPLIT	OFFSET	FLASH
6:30	to 10:00	--	X	X	X	X	X	--	2	1	2	--
16:00	to 19:00	--	X	X	X	X	X	--	3	1	3	--
ALL OTHER TIMES		X	X	X	X	X	X	X	1	1	1	--

STREET	PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C Chavez WBL	1	<R			<G		<Y	<R								
C Chavez EB	2	G	Y	R												
Guerrero SB	4	R							G		Y	R				
C Chavez WB	6	G					Y	R								
Guerrero NB	8	R							G		Y	R				
Guerrero NBR	13	OFF				G>		Y>	OFF							
Ped Xing Guerrero SS	2P	FRH	RH													
Ped Xing C Chavez WS	4P	RH							FRH		RH					
Ped Xing Guerrero NS	6P	FRH					RH									
Ped Xing C Chavez ES	8P	RH							FRH		RH					

ws3.0

CSO	CYCLE (seconds)	OFFSET (seconds)	SIGNAL INTERVALS (seconds)														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
111	80.0	45	See Page 1 for Dial 111														
212	106.0	103	See Page 1 for Dial 212														
313	106.0	63	4.0	22.0	4.0	2.0	11.0	18.0	4.0	2.0	17.5	1.0	14.0	4.0	2.5		

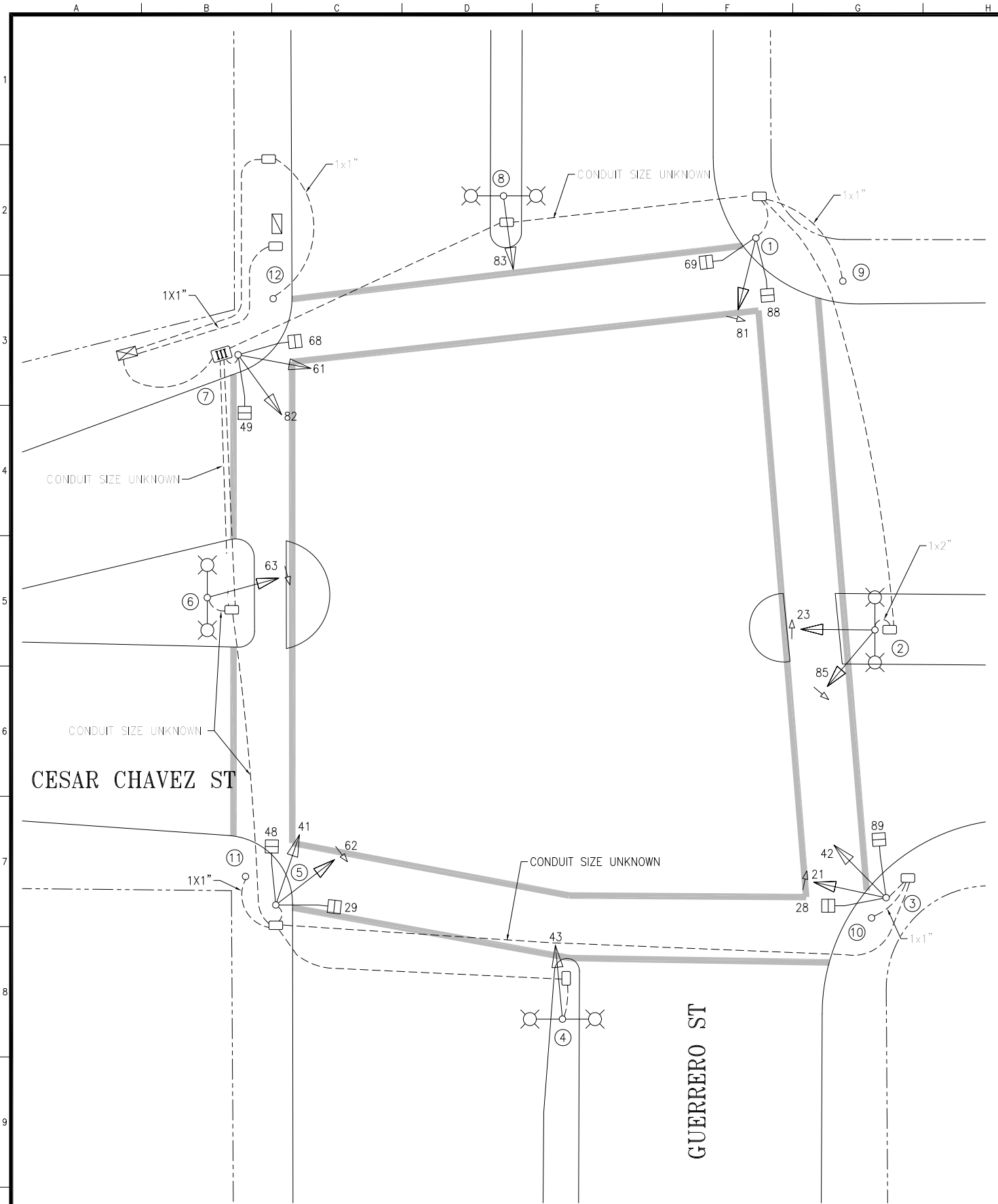
Cesar Chavez and Guerrero

CHANGE 28

**EXISTING CONDITIONS**

**POLE AND EQUIPMENT SCHEDULE**

POLE No.	TYPE OF POLE	VEHICLE SIGNAL					PEDESTRIAN SIGNAL			REMARKS
		No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING	
①	1-A (10')	81	5S12"GYRA	TV-1-T	T		69 88	1S-IN 1S-IN	SP-2-T	
②	SL	23 85	4S12" GLA 5S12"GYRA	SV-2-TC	T T					
③	1-A (10')	21 42	4S12" GLA 3S12"	TV-2-T	T T		28 89	1S-IN 1S-IN	SP-2-T	
④	SL	43	3S12"	SV-1	FC					
⑤	1-A (10')	41 62	3S12" 4S12"GLA	TV-2-T-SFA	T T		29 48	1S-IN 1S-IN	SP-2-T	
⑥	SL	63	4S12"GLA	SV-1-T	T					
⑦	1-A (10')	61 82	3S12" 3S12"	TV-2-T	T T		49 68	1S-IN 1S-IN	SP-2-T	
⑧	SL	83	3S12"	SV-1	FC					
⑨	PPB POLE									
⑩	PPB POLE									
⑪	PPB POLE									
⑫	PPB POLE									



NOTE:  
CABINET FOUNDATION TYPE: M



NO.	DATE	DESCRIPTION	BY	APP.
4	9/12/16	REPLACED SIGNALS 23 AND 21 WITH 4S12" GLA	JH	ET
3	01/14	UPGRADED SIGNALS TO 12"; NEW POLE 2, 9, 10, 11, 12	LY	PW
2	06/00	ADDED 12" TO 43 & 83	CXL	RO
1	06/95	SIGNAL MODIFICATION CT22.	CXL	BW

TABLE OF REVISIONS  
CHECK WITH TRACING TO SEE IF YOU HAVE LATEST REVISION

**SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY**  
**TRANSPORTATION ENGINEERING**  
**CITY AND COUNTY OF SAN FRANCISCO**

DRAWN:	DATE:	SCALE:
CXL	07/09/99	AS SHOWN
CHECKED:	DATE:	SHEET OF SHEETS
		1 OF 1

<b>TRAFFIC SIGNAL INVENTORY DIAGRAM</b>	CNN NO.
<b>CESAR CHAVEZ ST AND GUERRERO ST</b>	21897000
	REV. NO.
	4

FILE NAME: Cesar-Chavez-Guerrero.dwg  
 DATE: MAY 30 2001 16:09  
 ORIGIN: SECTION  
 SCALE: 1"=1  
 PLOTS USED: ROMAND.GPJ, ROMAND.HES, ROMAND.SHX, romant.shx



# TransBASE Internal Dashboard

# COLLISIONS

Geographic Extent: 21897000: GUERRERO ST at CESAR CHAVEZ ST  
 Spatial Intersect: SFMTA Intersection Related (<=20ft or <=150ft if Rear End)  
 Data Range: 07/01/2015 to 06/30/2020  
 Pull Date: 11/4/2020

## Collision/Party/Victim Table Showing 1 to 12 of 12 entries



















Count of Fatal Collisions: 0  
 Count of Non-Fatal Injury Collisions: 12  
 Total Count of Fatal/Non-Fatal Injury Collisions: 12

Case ID	Collision Date	Collision Time	Day of Week	Primary Road	Secondary Road	Distance	Direction	Party 1 Type	Party 1 Direction of Travel	Party 1 Movement Preceding Crash	Party 2 Type	Party 2 Direction of Travel	Party 2 Movement Preceding Crash	Vehicle Code Violation	Highest Degree of Injury	Type of Collision	Motor Vehicle Involved With	Weather	Lighting
200384058 <b>SBL vs NBT</b>	06/26/2020	21:49	Friday	GUERRERO ST	CESAR CHAVEZ ST	0	Not Stated	Driver	South	Making Left Turn	Driver	North	Proceeding Straight	CVC 21800(a)	Injury (Complaint of Pain)	Broadside	Other Motor Vehicle	Clear	Dark - Street Lights
190870288 <b>SBL vs NBT</b>	11/17/2019	16:07	Sunday	GUERRERO ST	CESAR CHAVEZ ST	0	Not Stated	Driver	North	Crossed Into Opposing Lane	Driver	South	Proceeding Straight	CVC 23152(a)	Injury (Complaint of Pain)	Sideswipe	Motor Vehicle on Other Roadway	Clear	Daylight
190637583 <b>NBT rear end</b>	08/28/2019	08:55	Wednesday	GUERRERO ST	CESAR CHAVEZ ST	28	South	Driver	North	Proceeding Straight	Driver	North	Proceeding Straight	CVC 21703	Injury (Complaint of Pain)	Rear End	Other Motor Vehicle	Clear	Daylight
190128811 <b>SBL vs NBT</b>	02/20/2019	20:28	Wednesday	GUERRERO ST	CESAR CHAVEZ ST	0	Not Stated	Driver	East	Making Left Turn	Driver	North	Proceeding Straight	CVC 22107	Injury (Complaint of Pain)	Broadside	Other Motor Vehicle	Clear	Dark - Street Lights
180064639 <b>NBR vs ped</b>	01/24/2018	19:31	Wednesday	GUERRERO ST	CESAR CHAVEZ ST	0	Not Stated	Driver	East	Making Right Turn	Pedestrian	North	Proceeding Straight	CVC 21950(a)	Injury (Complaint of Pain)	Vehicle/ Pedestrian	Pedestrian	Raining	Dark - Street Lights
171053649 <b>SBT rear end</b>	12/30/2017	20:34	Saturday	GUERRERO ST	CESAR CHAVEZ ST	12	North	Driver	South	Proceeding Straight	Driver	South	Stopped In Road	CVC 22350	Injury (Complaint of Pain)	Rear End	Other Motor Vehicle	Clear	Dark - Street Lights
170232460 <b>NBT vs WBT</b>	03/21/2017	15:48	Tuesday	GUERRERO ST	CESAR CHAVEZ ST	0	Not Stated	Driver	North	Proceeding Straight	Driver	West	Proceeding Straight	CVC 21453(a)	Injury (Complaint of Pain)	Broadside	Other Motor Vehicle	Clear	Daylight
160956090 <b>SBT vs EBT</b>	11/23/2016	10:54	Wednesday	GUERRERO ST	CESAR CHAVEZ ST	0	Not Stated	Driver	South	Proceeding Straight	Driver	East	Proceeding Straight	CVC 21453(a)	Injury (Other Visible)	Broadside	Other Motor Vehicle	Clear	Dark - Street Lights
160799301 <b>EB rear end</b>	10/01/2016	21:45	Saturday	CESAR CHAVEZ ST	GUERRERO ST	0	Not Stated	Driver	East	Proceeding Straight	Driver	East	Stopped In Road	CVC 22350	Injury (Complaint of Pain)	Rear End	Other Motor Vehicle	Clear	Dusk - Dawn
160614878 <b>SBT vs EBT</b>	07/30/2016	20:49	Saturday	CESAR CHAVEZ ST	GUERRERO ST	0	Not Stated	Driver	South	Proceeding Straight	Driver	East	Proceeding Straight	CVC 21453(a)	Injury (Complaint of Pain)	Broadside	Other Motor Vehicle	Clear	Dark - Street Lights
160364948 <b>EBT vs SBT</b>	05/04/2016	11:17	Wednesday	CESAR CHAVEZ ST	GUERRERO ST	0	Not Stated	Driver	East	Stopped In Road	Driver	South	Stopped In Road	CVC Unknown	Injury (Complaint of Pain)	Broadside	Other Motor Vehicle	Cloudy	Daylight
160063899 <b>WBL vs ped</b>	01/22/2016	22:33	Friday	GUERRERO ST	CESAR CHAVEZ ST	14	North	Driver	North	Making Right Turn	Pedestrian	West	Other	CVC 21950(a)	Injury (Complaint of Pain)	Vehicle/ Pedestrian	Pedestrian	Raining	Dark - Street Lights



Cesar Chavez & Guerrero  
Existing Conditions

Timing Plan: Dial 111

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	157	11	82	108	69	2	818	70	51	570	10
Future Volume (vph)	12	157	11	82	108	69	2	818	70	51	570	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	10	10	16	12	11	12
Total Lost time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Lane Util. Factor		0.95		1.00	1.00			0.95	1.00		0.95	
Frbp, ped/bikes		1.00		1.00	0.99			1.00	1.00		1.00	
Flpb, ped/bikes		1.00		1.00	1.00			1.00	1.00		1.00	
Frt		0.99		1.00	0.94			1.00	0.85		1.00	
Flt Protected		1.00		0.95	1.00			1.00	1.00		1.00	
Satd. Flow (prot)		3258		1652	1617			3303	1794		3394	
Flt Permitted		0.67		0.95	1.00			0.95	1.00		0.57	
Satd. Flow (perm)		2177		1652	1617			3149	1794		1926	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	171	12	89	117	75	2	889	76	55	620	11
RTOR Reduction (vph)	0	6	0	0	31	0	0	0	59	0	1	0
Lane Group Flow (vph)	0	190	0	89	161	0	0	891	17	0	685	0
Confl. Peds. (#/hr)	14		7	7		14	30		9	9		30
Turn Type	Perm	NA		Split	NA		Perm	NA	custom	Perm	NA	
Protected Phases		2		6	6			8	1		4	
Permitted Phases	2						8					4
Actuated Green, G (s)		21.0		17.0	17.0			19.0	17.0		19.0	
Effective Green, g (s)		21.0		17.0	17.0			19.0	17.0		19.0	
Actuated g/C Ratio		0.28		0.23	0.23			0.25	0.23		0.25	
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Lane Grp Cap (vph)		609		374	366			797	406		487	
v/s Ratio Prot				0.05	c0.10				0.01			
v/s Ratio Perm		c0.09						0.28			c0.36	
v/c Ratio		0.31		0.24	0.44			1.12	0.04		1.41	
Uniform Delay, d1		21.3		23.7	24.9			28.0	22.6		28.0	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		1.3		1.5	3.8			69.4	0.2		194.5	
Delay (s)		22.6		25.2	28.7			97.4	22.8		222.5	
Level of Service		C		C	C			F	C		F	
Approach Delay (s)		22.6			27.6			91.6			222.5	
Approach LOS		C			C			F			F	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			119.0									F
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			75.0							18.0		
Intersection Capacity Utilization			91.9%									F
Analysis Period (min)			15									
c Critical Lane Group												

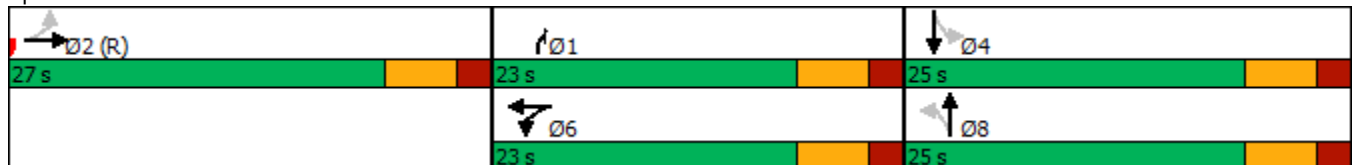


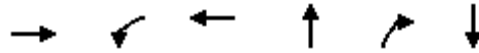


Phase Number	1	2	4	6	8
Movement	NBR	EBTL	SBTL	WBTL	NBTL
Lead/Lag					
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	Max
Maximum Split (s)	23	27	25	23	25
Maximum Split (%)	30.7%	36.0%	33.3%	30.7%	33.3%
Minimum Split (s)	23	27	25	23	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		4	4	4	4
Flash Dont Walk (s)		17	14	13	15
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	74	47	22	74	22
End Time (s)	22	74	47	22	47
Yield/Force Off (s)	16	68	41	16	41
Yield/Force Off 170(s)	16	51	27	3	26
Local Start Time (s)	27	0	50	27	50
Local Yield (s)	44	21	69	44	69
Local Yield 170(s)	44	4	55	31	54

Intersection Summary	
Cycle Length	75
Control Type	Pretimed
Natural Cycle	80
Offset: 47 (63%), Referenced to phase 2:EBTL, Start of Green	

Splits and Phases: 4:





Lane Group	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	196	89	192	891	76	686
v/c Ratio	0.32	0.24	0.48	1.12	0.15	1.40
Control Delay	22.1	25.8	24.5	98.4	1.9	219.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	25.8	24.5	98.4	1.9	219.9
Queue Length 50th (ft)	35	34	61	~255	0	~231
Queue Length 95th (ft)	63	72	121	#368	10	#338
Internal Link Dist (ft)	575		542	218		193
Turn Bay Length (ft)					130	
Base Capacity (vph)	616	374	397	797	507	489
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.24	0.48	1.12	0.15	1.40

**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↖	↗	↖		↕↕	↖		↕↕	
Traffic Volume (vph)	13	412	7	211	279	196	4	1127	337	90	470	10
Future Volume (vph)	13	412	7	211	279	196	4	1127	337	90	470	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	10	10	16	12	11	12
Total Lost time (s)		6.0		6.0	6.0	6.0		6.0	6.0		6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00		0.95	1.00		0.95	
Frbp, ped/bikes		1.00		1.00	1.00	0.95		1.00	1.00		1.00	
Flpb, ped/bikes		1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Frt		1.00		1.00	1.00	0.85		1.00	0.85		1.00	
Flt Protected		1.00		0.95	1.00	1.00		1.00	1.00		0.99	
Satd. Flow (prot)		3289		1652	1739	1407		3302	1794		3377	
Flt Permitted		0.65		0.95	1.00	1.00		0.95	1.00		0.52	
Satd. Flow (perm)		2139		1652	1739	1407		3148	1794		1757	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	13	425	7	218	288	202	4	1162	347	93	485	10
RTOR Reduction (vph)	0	2	0	0	0	159	0	0	140	0	1	0
Lane Group Flow (vph)	0	443	0	218	288	43	0	1166	207	0	587	0
Confl. Peds. (#/hr)	23		18	18		23	53		26	26		53
Turn Type	Perm	NA		Split	NA	Perm	Perm	NA	custom	Perm	NA	
Protected Phases		2		6	6			8	1		4	
Permitted Phases	2					6	8			4		
Actuated Green, G (s)		21.0		19.0	19.0	19.0		32.0	19.0		32.0	
Effective Green, g (s)		21.0		19.0	19.0	19.0		32.0	19.0		32.0	
Actuated g/C Ratio		0.23		0.21	0.21	0.21		0.36	0.21		0.36	
Clearance Time (s)		6.0		6.0	6.0	6.0		6.0	6.0		6.0	
Lane Grp Cap (vph)		499		348	367	297		1119	378		624	
v/s Ratio Prot				0.13	c0.17				0.12			
v/s Ratio Perm		c0.21				0.03		c0.37			0.33	
v/c Ratio		0.89		0.63	0.78	0.14		1.04	0.55		1.15dl	
Uniform Delay, d1		33.4		32.3	33.6	28.9		29.0	31.7		28.1	
Progression Factor		1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		20.5		8.3	15.4	1.0		38.5	5.6		24.0	
Delay (s)		53.8		40.5	49.0	29.9		67.5	37.2		52.1	
Level of Service		D		D	D	C		E	D		D	
Approach Delay (s)		53.8			40.9			60.6			52.1	
Approach LOS		D			D			E			D	

**Intersection Summary**

HCM 2000 Control Delay	53.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	99.4%	ICU Level of Service	F
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

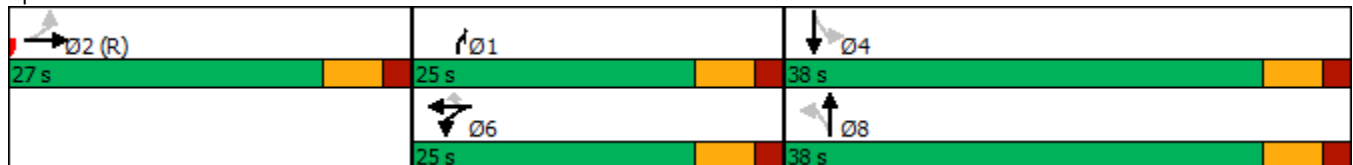


Phase Number	1	2	4	6	8
Movement	NBR	EBTL	SBTL	WBTL	NBTL
Lead/Lag					
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	Max
Maximum Split (s)	25	27	38	25	38
Maximum Split (%)	27.8%	30.0%	42.2%	27.8%	42.2%
Minimum Split (s)	25	27	38	25	38
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	4	4	4	4	4
Flash Dont Walk (s)	15	17	14	13	15
Dual Entry	Yes	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	28	1	53	28	53
End Time (s)	53	28	1	53	1
Yield/Force Off (s)	47	22	85	47	85
Yield/Force Off 170(s)	32	5	71	34	70
Local Start Time (s)	27	0	52	27	52
Local Yield (s)	46	21	84	46	84
Local Yield 170(s)	31	4	70	33	69

Intersection Summary

Cycle Length	90
Control Type	Pretimed
Natural Cycle	90
Offset: 1 (1%), Referenced to phase 2:EBTL, Start of Green	

Splits and Phases: 4:





Lane Group	EBT	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	445	218	288	202	1166	347	588
v/c Ratio	0.89	0.63	0.78	0.44	1.04	0.67	1.15dl
Control Delay	55.2	41.3	50.4	8.0	68.7	22.7	53.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.2	41.3	50.4	8.0	68.7	22.7	53.8
Queue Length 50th (ft)	128	113	156	0	~381	85	167
Queue Length 95th (ft)	#219	190	#281	56	#509	181	#280
Internal Link Dist (ft)	575		542		218		193
Turn Bay Length (ft)				130		130	
Base Capacity (vph)	500	348	367	456	1118	519	625
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.63	0.78	0.44	1.04	0.67	0.94

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	15	318	17	385	376	220	2	819	286	0	806	26	
Future Volume (vph)	15	318	17	385	376	220	2	819	286	0	806	26	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	10	12	10	10	10	10	10	16	12	11	12	
Total Lost time (s)		6.0		6.0	6.0	6.0		6.0	6.0		6.0		
Lane Util. Factor		0.95		1.00	1.00	1.00		0.95	1.00		0.95		
Frbp, ped/bikes		1.00		1.00	1.00	0.94		1.00	1.00		1.00		
Flpb, ped/bikes		1.00		1.00	1.00	1.00		1.00	1.00		1.00		
Frt		0.99		1.00	1.00	0.85		1.00	0.85		1.00		
Flt Protected		1.00		0.95	1.00	1.00		1.00	1.00		1.00		
Satd. Flow (prot)		3267		1652	1739	1382		3303	1794		3391		
Flt Permitted		0.62		0.95	1.00	1.00		0.95	1.00		1.00		
Satd. Flow (perm)		2037		1652	1739	1382		3131	1794		3391		
Peak-hour factor, 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	
Adj. Flow (vph)	17	353	19	428	418	244	2	910	318	0	896	29	
RTOR Reduction (vph)	0	4	0	0	0	144	0	0	164	0	3	0	
Lane Group Flow (vph)	0	385	0	428	418	100	0	912	154	0	922	0	
Confl. Peds. (#/hr)	34		17	17		34	47		27	27		47	
Turn Type	Perm	NA		Prot	NA	Perm	Perm	NA	Over		NA		
Protected Phases		2		1	6			8	1		4		
Permitted Phases	2					6	8						
Actuated Green, G (s)		21.0		25.0	25.0	25.0		26.0	25.0		26.0		
Effective Green, g (s)		21.0		25.0	25.0	25.0		26.0	25.0		26.0		
Actuated g/C Ratio		0.23		0.28	0.28	0.28		0.29	0.28		0.29		
Clearance Time (s)		6.0		6.0	6.0	6.0		6.0	6.0		6.0		
Lane Grp Cap (vph)		475		458	483	383		904	498		979		
v/s Ratio Prot				c0.26	0.24				0.09		0.27		
v/s Ratio Perm		c0.19				0.07		c0.29					
v/c Ratio		0.81		0.93	0.87	0.26		1.01	0.31		0.94		
Uniform Delay, d1		32.6		31.7	30.9	25.3		32.0	25.7		31.3		
Progression Factor		1.00		1.00	1.00	1.00		1.00	1.00		1.00		
Incremental Delay, d2		14.0		28.5	18.4	1.6		32.1	1.6		17.8		
Delay (s)		46.6		60.2	49.3	26.9		64.1	27.3		49.0		
Level of Service		D		E	D	C		E	C		D		
Approach Delay (s)		46.6			48.6			54.6			49.0		
Approach LOS		D			D			D			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			50.5		HCM 2000 Level of Service					D			
HCM 2000 Volume to Capacity ratio			0.92										
Actuated Cycle Length (s)			90.0		Sum of lost time (s)					18.0			
Intersection Capacity Utilization			77.9%		ICU Level of Service					D			
Analysis Period (min)			15										
c Critical Lane Group													

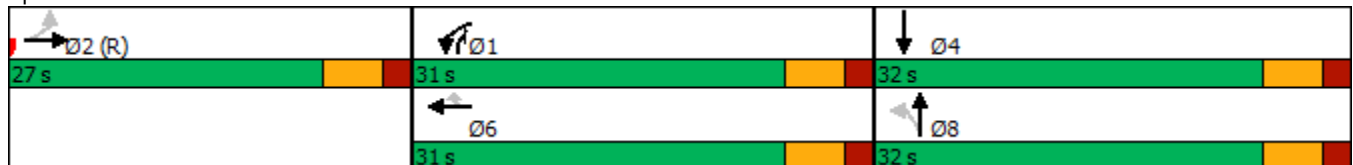


Phase Number	1	2	4	6	8
Movement	WBL	EBTL	SBT	WBT	NBTL
Lead/Lag					
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	Max
Maximum Split (s)	31	27	32	31	32
Maximum Split (%)	34.4%	30.0%	35.6%	34.4%	35.6%
Minimum Split (s)	31	27	32	31	32
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		4	4	4	4
Flash Dont Walk (s)		17	14	13	15
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	50	23	81	50	81
End Time (s)	81	50	23	81	23
Yield/Force Off (s)	75	44	17	75	17
Yield/Force Off 170(s)	75	27	3	62	2
Local Start Time (s)	27	0	58	27	58
Local Yield (s)	52	21	84	52	84
Local Yield 170(s)	52	4	70	39	69

Intersection Summary

Cycle Length	90
Control Type	Pretimed
Natural Cycle	90
Offset: 23 (26%), Referenced to phase 2:EBTL, Start of Green	

Splits and Phases: 4:







Lane Group	EBT	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	389	428	418	244	912	318	925
v/c Ratio	0.81	0.93	0.87	0.46	1.01	0.48	0.94
Control Delay	47.3	62.1	50.8	9.6	65.4	10.9	50.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	62.1	50.8	9.6	65.4	10.9	50.0
Queue Length 50th (ft)	108	237	225	19	~276	39	268
Queue Length 95th (ft)	#185	#418	#390	81	#409	112	#394
Internal Link Dist (ft)	575		542		218		193
Turn Bay Length (ft)				130		130	
Base Capacity (vph)	479	458	483	528	904	662	982
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.93	0.87	0.46	1.01	0.48	0.94



















**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	169	11	82	108	69	2	818	70	51	570	10	
Future Volume (vph)	0	169	11	82	108	69	2	818	70	51	570	10	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	10	12	10	10	10	10	10	16	8	11	11	
Total Lost time (s)		6.0		6.0	6.0			6.0	6.0		6.5		
Lane Util. Factor		0.95		1.00	1.00			0.95	1.00		0.95		
Frbp, ped/bikes		1.00		1.00	0.99			1.00	0.99		1.00		
Flpb, ped/bikes		1.00		1.00	1.00			1.00	1.00		1.00		
Frt		0.99		1.00	0.94			1.00	0.85		1.00		
Flt Protected		1.00		0.95	1.00			1.00	1.00		1.00		
Satd. Flow (prot)		3269		1652	1617			3303	1769		3394		
Flt Permitted		1.00		0.95	1.00			0.95	1.00		0.58		
Satd. Flow (perm)		3269		1652	1617			3149	1769		1965		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	184	12	89	117	75	2	889	76	55	620	11	
RTOR Reduction (vph)	0	6	0	0	5	0	0	0	42	0	1	0	
Lane Group Flow (vph)	0	190	0	89	187	0	0	891	34	0	685	0	
Confl. Peds. (#/hr)	14		7	7		14	30		9	9		30	
Turn Type		NA		Prot	NA		Perm	NA	pm+ov	Perm	NA		
Protected Phases		2		1	6			8	1		4		
Permitted Phases							8		8		4		
Actuated Green, G (s)		26.0		14.0	46.0			22.0	36.0		21.5		
Effective Green, g (s)		26.0		14.0	46.0			22.0	36.0		21.5		
Actuated g/C Ratio		0.32		0.18	0.58			0.28	0.45		0.27		
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0		6.5		
Lane Grp Cap (vph)		1062		289	929			865	928		528		
v/s Ratio Prot		0.06		c0.05	c0.12				0.01				
v/s Ratio Perm								0.28	0.01		c0.35		
v/c Ratio		0.18		0.31	0.20			1.03	0.04		1.30		
Uniform Delay, d1		19.3		28.8	8.2			29.0	12.3		29.2		
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00		
Incremental Delay, d2		0.4		2.7	0.5			38.5	0.1		146.9		
Delay (s)		19.7		31.5	8.7			67.5	12.4		176.2		
Level of Service		B		C	A			E	B		F		
Approach Delay (s)		19.7			15.9			63.2			176.2		
Approach LOS		B			B			E			F		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			89.4									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			0.62										
Actuated Cycle Length (s)			80.0									Sum of lost time (s)	18.5
Intersection Capacity Utilization			82.7%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													

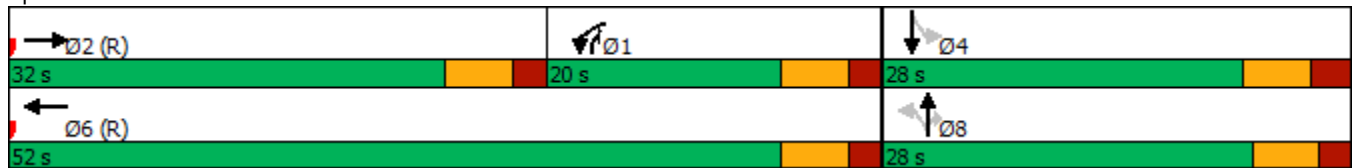


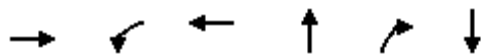
Phase Number	1	2	4	6	8
Movement	WBL	EBT	SBTL	WBT	NBTL
Lead/Lag	Lag	Lead			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	Max	Max	Max	Max	Max
Maximum Split (s)	20	32	28	52	28
Maximum Split (%)	25.0%	40.0%	35.0%	65.0%	35.0%
Minimum Split (s)	20	32	28	52	28
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2.5	2	2
Minimum Initial (s)	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		4	4	4	4
Flash Dont Walk (s)		17	14	13	15
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	32	0	52	0	52
End Time (s)	52	32	0	52	0
Yield/Force Off (s)	46	26	73.5	46	74
Yield/Force Off 170(s)	46	9	59.5	33	59
Local Start Time (s)	32	0	52	0	52
Local Yield (s)	46	26	73.5	46	74
Local Yield 170(s)	46	9	59.5	33	59

Intersection Summary

Cycle Length	80
Control Type	Pretimed
Natural Cycle	80
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	

Splits and Phases: 4:





Lane Group	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	196	89	192	891	76	686
v/c Ratio	0.18	0.31	0.21	1.03	0.09	1.29
Control Delay	19.0	32.2	8.3	69.1	2.9	174.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.0	32.2	8.3	69.1	2.9	174.3
Queue Length 50th (ft)	34	39	39	~254	0	~235
Queue Length 95th (ft)	59	81	71	#370	18	#345
Internal Link Dist (ft)	575		542	218		193
Turn Bay Length (ft)					130	
Base Capacity (vph)	1068	289	934	865	837	530
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.31	0.21	1.03	0.09	1.29





















**Intersection Summary**

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	425	7	211	279	196	4	1127	337	90	470	10
Future Volume (vph)	0	425	7	211	279	196	4	1127	337	90	470	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	10	10	16	8	11	11
Total Lost time (s)		6.0		6.0	6.0	6.0		6.0	6.0		6.5	
Lane Util. Factor		0.95		1.00	1.00	1.00		0.95	1.00		0.95	
Frbp, ped/bikes		1.00		1.00	1.00	0.95		1.00	1.00		1.00	
Flpb, ped/bikes		1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Fr		1.00		1.00	1.00	0.85		1.00	0.85		1.00	
Flt Protected		1.00		0.95	1.00	1.00		1.00	1.00		0.99	
Satd. Flow (prot)		3293		1652	1739	1398		3302	1794		3376	
Flt Permitted		1.00		0.95	1.00	1.00		0.95	1.00		0.52	
Satd. Flow (perm)		3293		1652	1739	1398		3148	1794		1777	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	438	7	218	288	202	4	1162	347	93	485	10
RTOR Reduction (vph)	0	1	0	0	0	20	0	0	119	0	1	0
Lane Group Flow (vph)	0	444	0	218	288	182	0	1166	228	0	587	0
Confl. Peds. (#/hr)	23		18	18		23	53		26	26		53
Turn Type		NA		Prot	NA	Perm	Perm	NA	Over	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases						6	8			4		
Actuated Green, G (s)		26.0		15.0	47.0	47.0		47.0	15.0		46.5	
Effective Green, g (s)		26.0		15.0	47.0	47.0		47.0	15.0		46.5	
Actuated g/C Ratio		0.25		0.14	0.44	0.44		0.44	0.14		0.44	
Clearance Time (s)		6.0		6.0	6.0	6.0		6.0	6.0		6.5	
Lane Grp Cap (vph)		807		233	771	619		1395	253		779	
v/s Ratio Prot		c0.13		c0.13	0.17				0.13			
v/s Ratio Perm						0.13		c0.37			0.33	
v/c Ratio		0.55		0.94	0.37	0.29		0.84	0.90		1.02dl	
Uniform Delay, d1		34.9		45.0	19.7	18.9		26.1	44.8		24.9	
Progression Factor		1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		2.7		44.4	1.4	1.2		6.1	35.7		6.7	
Delay (s)		37.6		89.4	21.1	20.1		32.2	80.4		31.6	
Level of Service		D		F	C	C		C	F		C	
Approach Delay (s)		37.6			41.8			43.2			31.6	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		
dl Defacto Left Lane. Recode with 1 though lane as a left lane.			
c Critical Lane Group			

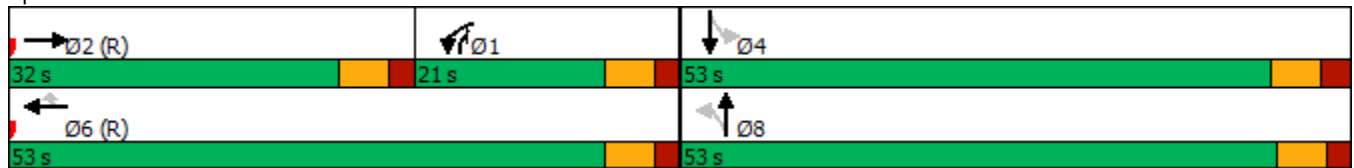


Phase Number	1	2	4	6	8
Movement	WBL	EBT	SBTL	WBT	NBTL
Lead/Lag	Lag	Lead			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	Max	Max	Max	Max	Max
Maximum Split (s)	21	32	53	53	53
Maximum Split (%)	19.8%	30.2%	50.0%	50.0%	50.0%
Minimum Split (s)	16	32	52	50	52
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2.5	2	2
Minimum Initial (s)	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		4	4	4	4
Flash Dont Walk (s)		17	14	13	15
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	79	47	100	47	100
End Time (s)	100	79	47	100	47
Yield/Force Off (s)	94	73	40.5	94	41
Yield/Force Off 170(s)	94	56	26.5	81	26
Local Start Time (s)	32	0	53	0	53
Local Yield (s)	47	26	99.5	47	100
Local Yield 170(s)	47	9	85.5	34	85

Intersection Summary

Cycle Length	106
Control Type	Pretimed
Natural Cycle	105
Offset: 47 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green	

Splits and Phases: 4:





Lane Group	EBT	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	445	218	288	202	1166	347	588
v/c Ratio	0.55	0.94	0.37	0.32	0.84	0.93	1.02dl
Control Delay	37.9	90.7	21.5	17.1	32.7	59.9	32.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	90.7	21.5	17.1	32.7	59.9	32.4
Queue Length 50th (ft)	138	148	127	70	358	145	171
Queue Length 95th (ft)	191	#294	195	124	454	#321	246
Internal Link Dist (ft)	575		542		218		193
Turn Bay Length (ft)				130		130	
Base Capacity (vph)	808	233	771	639	1395	373	779
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.94	0.37	0.32	0.84	0.93	0.75

























**Intersection Summary**

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 			 	 	
Traffic Volume (vph)	0	333	17	385	376	220	2	819	286	0	806	26	
Future Volume (vph)	0	333	17	385	376	220	2	819	286	0	806	26	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	10	12	10	10	10	10	10	16	8	11	11	
Total Lost time (s)		6.0		6.0	6.0	6.0		6.0	6.0		6.5		
Lane Util. Factor		0.95		1.00	1.00	1.00		0.95	1.00		0.95		
Frbp, ped/bikes		1.00		1.00	1.00	0.93		1.00	1.00		1.00		
Flpb, ped/bikes		1.00		1.00	1.00	1.00		1.00	1.00		1.00		
Frt		0.99		1.00	1.00	0.85		1.00	0.85		1.00		
Flt Protected		1.00		0.95	1.00	1.00		1.00	1.00		1.00		
Satd. Flow (prot)		3273		1652	1739	1368		3303	1794		3389		
Flt Permitted		1.00		0.95	1.00	1.00		0.95	1.00		1.00		
Satd. Flow (perm)		3273		1652	1739	1368		3149	1794		3389		
Peak-hour factor, 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	
Adj. Flow (vph)	0	370	19	428	418	244	2	910	318	0	896	29	
RTOR Reduction (vph)	0	4	0	0	0	15	0	0	139	0	2	0	
Lane Group Flow (vph)	0	385	0	428	418	229	0	912	179	0	923	0	
Confl. Peds. (#/hr)	34		17	17		34	47		27	27		47	
Turn Type		NA		Prot	NA	Perm	Perm	NA	Over		NA		
Protected Phases		2		1	6			8	1		4		
Permitted Phases						6	8						
Actuated Green, G (s)		26.0		29.0	61.0	61.0		33.0	29.0		32.5		
Effective Green, g (s)		26.0		29.0	61.0	61.0		33.0	29.0		32.5		
Actuated g/C Ratio		0.25		0.27	0.58	0.58		0.31	0.27		0.31		
Clearance Time (s)		6.0		6.0	6.0	6.0		6.0	6.0		6.5		
Lane Grp Cap (vph)		802		451	1000	787		980	490		1039		
v/s Ratio Prot		c0.12		c0.26	0.24				0.10		0.27		
v/s Ratio Perm						0.17		c0.29					
v/c Ratio		0.48		0.95	0.42	0.29		0.93	0.36		0.89		
Uniform Delay, d1		34.2		37.8	12.6	11.5		35.4	31.1		35.0		
Progression Factor		1.00		1.00	1.00	1.00		1.00	1.00		1.00		
Incremental Delay, d2		2.1		31.4	1.3	0.9		16.2	2.1		11.3		
Delay (s)		36.3		69.1	13.9	12.4		51.6	33.2		46.3		
Level of Service		D		E	B	B		D	C		D		
Approach Delay (s)		36.3			35.2			46.8			46.3		
Approach LOS		D			D			D			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			42.1		HCM 2000 Level of Service					D			
HCM 2000 Volume to Capacity ratio			0.81										
Actuated Cycle Length (s)			106.0		Sum of lost time (s)					18.5			
Intersection Capacity Utilization			77.9%		ICU Level of Service					D			
Analysis Period (min)			15										
c Critical Lane Group													

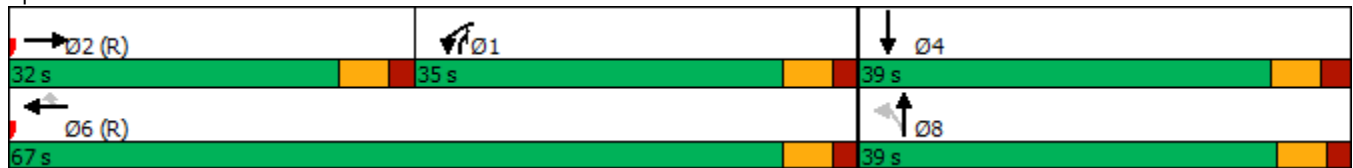


Phase Number	1	2	4	6	8
Movement	WBL	EBT	SBT	WBT	NBTL
Lead/Lag	Lag	Lead			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	Max	Max	Max	Max	Max
Maximum Split (s)	35	32	39	67	39
Maximum Split (%)	33.0%	30.2%	36.8%	63.2%	36.8%
Minimum Split (s)	33	27	35	65	35
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2.5	2	2
Minimum Initial (s)	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		4	4	4	4
Flash Dont Walk (s)		17	14	13	15
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	79	47	8	47	8
End Time (s)	8	79	47	8	47
Yield/Force Off (s)	2	73	40.5	2	41
Yield/Force Off 170(s)	2	56	26.5	95	26
Local Start Time (s)	32	0	67	0	67
Local Yield (s)	61	26	99.5	61	100
Local Yield 170(s)	61	9	85.5	48	85

Intersection Summary

Cycle Length	106
Control Type	Pretimed
Natural Cycle	100
Offset: 47 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green	

Splits and Phases: 4:





Lane Group	EBT	WBL	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	389	428	418	244	912	318	925
v/c Ratio	0.48	0.95	0.42	0.30	0.93	0.50	0.89
Control Delay	36.2	70.4	14.2	10.9	52.3	15.6	46.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	70.4	14.2	10.9	52.3	15.6	46.8
Queue Length 50th (ft)	117	285	149	67	314	67	313
Queue Length 95th (ft)	165	#478	220	115	#441	152	#428
Internal Link Dist (ft)	575		542		218		193
Turn Bay Length (ft)				130		130	
Base Capacity (vph)	806	451	1000	802	980	630	1040
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.95	0.42	0.30	0.93	0.50	0.89

**Intersection Summary**

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.