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Appendix F

Build Alternative  
Intersection Analysis Summary

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### Intersection Analysis Summary - 2020 Revised Build

No.	Intersection	Control Type	Approach Road	Movement	AM PEAK HOUR					PM PEAK HOUR						
					Post-Process Volume (vph)	LOS	Delay (sec)	LOS	Delay (sec)	95th Queue (ft)	Post-Process Volume (vph)	LOS	Delay (sec)	LOS	Delay (sec)	95th Queue (ft)
						Approach	Movement		Approach	Movement						
11	I-5 NB Ramps / 41st Division Drive (Main Gate)	Cloverleaf Merge / Diverge		Overall		Cloverleaf merge/diverge Not Applicable for Synchro Analysis						Cloverleaf merge/diverge Not Applicable for Synchro Analysis				
			I-5 Off Loop Ramp	EB-R												
			I-5 Off-Ramp	WB-R												
			41st Division Drive	NB-T												
			41st Division Drive	NB-R												
				SB-L												
			41st Division Drive	SB-T												
12	I-5 SB Ramps / 41st Division Drive (Main Gate)	Cloverleaf Merge / Diverge		Overall		Cloverleaf merge/diverge Not Applicable for Synchro Analysis						Cloverleaf merge/diverge Not Applicable for Synchro Analysis				
			I-5 Off Loop Ramp	EB-R												
			I-5 Off-ramp	WB-R												
			41st Division Drive	NB-T												
			41st Division Drive	NB-R												
				SB-T												
			41st Division Drive	SB-R												
13	I-5 NB Ramps / Berkeley Avenue	RAB		Overall	2,665	A	4.4				3,275	A	5.2			
			I-5 Off-ramp	EB-L	170			A	7.5	24	225			A	6.4	26
			I-5 Off-ramp	EB-T		A	1.7				0	A	2.3	A	6.4	26
			I-5 Off-ramp	EB-R	630			A	0.1		400			A	0.0	
			Berkeley Ave	NB-L												
			Berkeley Ave	NB-T	240	A	2.7	A	5.4	27	880	A	6.2	B	10.8	146
			Berkeley Ave	NB-R	445			A	1.3	19	1,305			A	3.1	146
			Berkeley Ave	SB-L	60			A	7.4		5			A	4.3	
			Berkeley Ave	SB-T	1,120	A	7.0	A	7.2		460	A	4.2	A	4.2	
			Berkeley Ave	SB-R												
14	I-5 SB Ramps / Berkeley Avenue	RAB		Overall	1,830	B	13.2				1,775	A	9.1			
			I-5 Off-ramp	WB-L	1,020			B	15.3	144	380			A	8.7	30
			I-5 Off-ramp	WB-T		B	15.2				5	A	8.7	A	8.1	30
			I-5 Off-ramp	WB-R	185			B	14.9	144	5			A	8.1	30
			Berkeley Ave	NB-L	140			A	4.2		545			A	7.1	
			Berkeley Ave	NB-T	270	A	4.2	A	4.3		560	A	6.8	A	6.6	
			Berkeley Ave	NB-R												
			Berkeley Ave	SB-L												
			Berkeley Ave	SB-T	160	B	19.3	B	19.3	70	85	B	18.6	B	18.6	95
			Berkeley Ave	SB-R	55			B	19.3	70	195			B	18.6	95
15	Berkeley Avenue / Union Avenue	two-way Stop Control		Overall	385	C	15.2				305	A	9.0			
			Militia Dr	EB-L	5			C	15.2	3						
			Militia Dr	EB-T	5	C	15.2	C	15.2	3						
			Militia Dr	EB-R	0											
			Union Ave	WB-L	0											
			Union Ave	WB-T	5	A	9.1	A	9.1		5	A	9.0	A	9.0	
			Union Ave	WB-R	150			A	9.1	15	115			A	9.0	11
			Berkeley Ave	SB-L	205			A	7.2	14	175			A	7.2	12
			Berkeley Ave	SB-T		A	7.2					A	7.2			
16	Berkeley Avenue/ Jackson Extension	New All-way Stop Control		Overall	760	B	13.9				920	C	23.8			
			RAMP	EB-L	280			C	16.4	125	415			D	31.7	250
			RAMP	EB-T		C	16.4					D	31.7			
			RAMP	EB-R	175			C	16.4	125	150			D	31.7	250
			Berkeley Ave	NB-L	150			B	11.0	28	140			B	11.9	30
			Berkeley Ave	NB-T	45	B	10.4	A	8.3	7	40	B	11.3	A	8.9	5
			Berkeley Ave	NB-R												
			Berkeley Ave	SB-L												
			Berkeley Ave	SB-T	45	A	9.5	A	9.5	10	35	B	11.1	B	11.1	27

### Intersection Analysis Summary - 2020 Revised Build

No.	Intersection	Control Type	Approach Road	Movement	AM PEAK HOUR					PM PEAK HOUR								
					Post-Process Volume (vph)	LOS	Delay (sec)	LOS	Delay (sec)	95th Queue (ft)	Post-Process Volume (vph)	LOS	Delay (sec)	LOS	Delay (sec)	95th Queue (ft)		
						Approach	Movement		Approach	Movement		Approach	Movement		Approach	Movement		
17	Berkeley Avenue / Washington Avenue	Stop Control on Washington (Right in/out)		Overall	420	A	9.3				370	A	9.2					
			Washington Ave	EB-L														
			Washington Ave	EB-T														
			Washington Ave	EB-R														
			Washington Ave	WB-L	0			A	9.3	4								
			Washington Ave	WB-T	0	A	9.3					A	9.2					
			Washington Ave	WB-R	45			A	9.3	4	70			A	9.2	7		
			Berkeley Ave	NB-L														
			Berkeley Ave	NB-T	150						110		0.0					
			Berkeley Ave	NB-R	5						5							
			Berkeley Ave	SB-L														
			Berkeley Ave	SB-T	220					0	185		0.0					
Berkeley Ave	SB-R						0											
18	I-5 NB Ramps / Thorne Lane	RAB		Overall	1,565	A	5.5				2,225	A	7.1					
			I-5 Off-ramp	EB-L	15			A	9.8	35	10		B	10.4	23			
			I-5 Off-ramp	EB-T		A	9.8				5		B	10.4	23			
			I-5 Off-ramp	EB-R	185			A	9.8	35	90		B	10.4	23			
			Thorne Ln	NB-L														
			Thorne Ln	NB-T	435	A	4.9			A	7.7	74	375	A	5.5	B	12.5	124
			Thorne Ln	NB-R	255					A	0.0		485			A	0.1	0
			Thorne Ln	SB-L	245					A	5.1		705			A	8.2	0
			Thorne Ln	SB-T	430	A	4.9			A	4.9		555	A	7.9	A	7.5	0
Thorne Ln	SB-R																	
19	I-5 SB Ramps / Thorne Lane	RAB		Overall	1,765	A	8.8				2,020	B	14.6					
			I-5 Off-ramp	WB-L	315			A	9.2	84	305		A	8.6	63			
			I-5 Off-ramp	WB-T	5	A	9.5			A	9.2	84	10	A	8.0	A	8.6	63
			I-5 Off-ramp	WB-R	405					A	10.0	74	350			A	7.5	62
			Thorne Ln	NB-L	405					A	7.0		310			A	6.3	
			Thorne Ln	NB-T	325	A	7.0			A	7.0		75	A	6.3	A	6.3	
			Thorne Ln	NB-R														
			Thorne Ln	SB-L														
			Thorne Ln	SB-T	270	A	9.6			A	9.8	50	955	C	22.3	C	22.3	266
Thorne Ln	SB-R	40					A	8.8	50	15			C	20.7	266			
20	Thorne Lane / Union Avenue (Union Ave Loop)	Tee with Stop Sign on Union Avenue		Overall	205	A	9.6				300	B	11.2					
			Union Ave	EB-L	20			A	9.6	2	110		B	11.2	B	11.2	18	
			Union Ave	EB-T		A	9.6											
			Union Ave	EB-R	0						0							
			Thorne Ln	NB-L	25					A	7.7	2	65			A	7.6	4
			Thorne Ln	NB-T	0	A	7.7					10	A	7.6	A	7.6	4	
			Thorne Ln	NB-R														
			Thorne Ln	SB-L														
			Thorne Ln	SB-T	0						0							
Thorne Ln	SB-R	160						115										
21	New Thorne Lane Union Avenue Loop	RAB		Overall	771	A	6.5				1,405	C	21.1					
			Union Loop	WB-L	20			A	4.5	3	115		A	72.3	18			
			Union Loop	WB-T		A	4.5			A	4.5	3		A	5.2			
			Union Loop	WB-R	1						5			A	10.6	18		
			Thorne Ln	NB-L														
			Thorne Ln	NB-T	300	A	7.0			A	7.3	80	315	A	7.0	A	7.0	93
			Thorne Ln	NB-R	160					A	6.6	80	110			A	7.0	93
			Thorne Ln	SB-L	0					A	4.9	48	5			C	8.3	599
			Thorne Ln	SB-T	290	A	5.7			A	5.7	48	855	C	30.4	C	8.3	599
Thorne Ln	SB-R																	

### Intersection Analysis Summary - 2020 Revised Build

No.	Intersection	Control Type	Approach Road	Movement	AM PEAK HOUR						PM PEAK HOUR					
					Post-Process Volume (vph)	LOS	Delay (sec)	LOS	Delay (sec)	95th Queue (ft)	Post-Process Volume (vph)	LOS	Delay (sec)	LOS	Delay (sec)	95th Queue (ft)
22	I-5 NB Ramps / Gravelly Lake Drive	Signal	Overall	1,230	C	24.0				1,460	C	35.0				
			I-5 Off-ramp	EB-L	380	D	41.3	D	44.9	#361	790	D	50.9	D	51.1	#651
			I-5 Off-ramp	EB-T	0			D	37.5	214	5			D	50.8	#642
			I-5 Off-ramp	EB-R	145			D	37.5	214	0			D	50.8	#642
			Gravelly Lk Dr	NB-L	0	D	43.4					D	52.4			
			Gravelly Lk Dr	NB-T	120			D	43.4	76	160			D	52.4	111
			Gravelly Lk Dr	NB-R	25			D	43.4	76	10			D	52.4	111
			Gravelly Lk Dr	SB-L	505	A	2.7	A	2.9	m51	395	A	1.1	A	1.2	m1
			Gravelly Lk Dr	SB-T	55			A	0.1	m0	100			A	0.6	m0
Gravelly Lk Dr	SB-R	0														
23	I-5 SB Ramps / Gravelly Lake Drive	Signal	Overall	2,035	D	38.4				2,430	D	37.9				
			I-5 Off-ramp	WB-L	5	D	44.0	D	42.6	13	15	D	53.8	D	51.7	33
			I-5 Off-ramp	WB-T	0			D	42.6	13				D	51.7	33
			I-5 Off-ramp	WB-R	290			D	44.0	76	440			D	53.9	109
			Gravelly Lk Dr	NB-L	70	A	9.2				15	A	3.1	A	3.1	43
			Gravelly Lk Dr	NB-T	555			A	9.2	64	935			A	3.1	43
			Gravelly Lk Dr	NB-R	0											
			Gravelly Lk Dr	SB-L	0	D	53.3					E	63.2			
			Gravelly Lk Dr	SB-T	555			E	60.8	#728	480			E	74.9	#651
Gravelly Lk Dr	SB-R	560	D	45.9	232			545	D	52.8	252					
25	Gravelly Lake Drive / Pacific Highway	Signal	Overall	2,345	B	12.6				3,020	B	17.9				
			Pacific Hwy	WB-L	110	D	48.3	D	49.3	69	260	E	57.2	E	60.0	156
			Pacific Hwy	WB-T	0											
			Pacific Hwy	WB-R	105			D	47.3	53	230			D	54.1	142
			Gravelly Lk Dr	NB-L	0	A	4.5					B	10.4			
			Gravelly Lk Dr	NB-T	805			A	4.6	138	1,220			B	11.1	185
			Gravelly Lk Dr	NB-R	40			A	1.4	m2	155			A	5.0	m8
			Gravelly Lk Dr	SB-L	250	B	12.0	D	51.2	248	315	B	10.3	C	28.1	230
			Gravelly Lk Dr	SB-T	1,035			A	2.5	106	840			A	3.6	133
Gravelly Lk Dr	SB-R															

**Note: For Two-way Stop Control Intersections - Overall LOS and delay is based on worse approach/movement**  
**Signalized and Non-signalized intersections analyzed with Synchro software**  
**Roundabout intersection analyzed with Sidra software**

### Intersection Analysis Summary - 2040 Revised Build

No.	Intersection	Control Type	Movement	AM PEAK HOUR						PM PEAK HOUR						
				Post-Process Volume (vph)	LOS	Delay (sec)	LOS	Delay (sec)	95th Queue (ft)	Post-Process Volume (vph)	LOS	Delay (sec)	LOS	Delay (sec)	95th Queue (ft)	
					Approach	Movement		Approach			Movement					
11	I-5 NB Ramps / 41st Division Drive (Main Gate)	Merge / Diverge	Overall	0	Cloverleaf merge/diverge Not Applicable for Synchro Analysis						Cloverleaf merge/diverge Not Applicable for Synchro Analysis					
			EB-R													
			WB-R													
			NB-T													
			NB-R													
			SB-T													
			SB-R													
12	I-5 SB Ramps / 41st Division Drive (Main Gate)	Merge / Diverge	Overall		Cloverleaf merge/diverge Not Applicable for Synchro Analysis						Cloverleaf merge/diverge Not Applicable for Synchro Analysis					
			EB-R													
			WB-R													
			NB-L													
			NB-T													
			NB-R													
			SB-L													
SB-T																
SB-R																
13	I-5 NB Ramps / Berkeley Avenue	RAB	Overall	2,865	A	4.5				2,520	A	4.6				
			I-5 Off-ramp	EB-L	170	A	1.7	A	7.7	25	140	A	3.1	A	5.1	14
			I-5 Off-ramp	EB-T						0	A			5.1	14	
			I-5 Off-ramp	EB-R	660			A	0.1	0	90			A		
			Berkeley Ave	NB-T	265	A	2.8	A	5.7	31	735	A	4.9	A	8.8	99
			Berkeley Ave	NB-R	530			A	1.4	23	1,175			A	2.5	79
			Berkeley Ave	SB-T	1,155	A	7.6	A	7.6		380	A	3.9	A	3.9	
Berkeley Ave	SB-R				0											
14	I-5 SB Ramps / Berkeley Avenue	RAB	Overall	1,995	B	16.7				1,475	A	8.7				
			I-5 Off-ramp	WB-L	1,055	B	18.1	B	18.2	180	285	A	7.1	A	7.1	21
			I-5 Off-ramp	WB-T						5	A			6.7	21	
			I-5 Off-ramp	WB-R	235			B	17.7	180	0			A	6.7	21
			Berkeley Ave	NB-L	140	A	4.4	A	4.2		535	A	6.1	A	6.4	
			Berkeley Ave	NB-T	295			A	4.4		340			A	5.6	
			Berkeley Ave	NB-R						0						
			Berkeley Ave	SB-L						0						
			Berkeley Ave	SB-T	185	C	29.6	C	29.6	112	95	B	17.6	B	17.6	99
Berkeley Ave	SB-R	85	C	29.6	112			215	B	17.6	99					
15	Berkeley Avenue / Union Avenue	Two-way Stop Control	Overall	410	C	15.5				250	B	13.2				
			Militia Dr	EB-L	10	C	15.5	C	15.5	4	5	B	13.2	B	13.5	1
			Militia Dr	EB-T	5			C	15.5	4						
			Militia Dr	EB-R	0						0					
			Union Ave	WB-L		A	9.3					A	8.9			
			Union Ave	WB-T	5			A		0	5			A	8.9	
			Union Ave	WB-R	180			A	9.3	19	60			A	8.9	5
			Berkeley Ave	SB-L	195	A	7.2	A	7.2	13	175	A	7.4	A	7.4	12
			Berkeley Ave	SB-T				A	7.2	13						
Berkeley Ave	SB-R	15						5	A	7.4	12					
16	Berkeley Avenue/ Jackson Extension (Interchange Ramp)		Overall	775	B	12.3				730	B	10.9				
			RAMP	EB-L	210	B	14.2	B	14.2	80	170	B	12.4	B	12.4	57
			RAMP	EB-T												
			RAMP	EB-R	165			B	14.2	80	170			B	12.4	57
			Berkeley Ave	NB-L	190	B	11.1	B	11.8	40	130	A	9.5	B	10.1	23
			Berkeley Ave	NB-T	50			A	8.2	7	65			A	8.3	10
			Berkeley Ave	NB-R												
			Berkeley Ave	SB-L												
			Berkeley Ave	SB-T	45	A	9.9	A	9.9	25	15	A	9.6	B	9.6	28
Berkeley Ave	SB-R	115	A	9.9	25			180	B	9.6	28					

### Intersection Analysis Summary - 2040 Revised Build

No.	Intersection	Control Type	Movement	AM PEAK HOUR						PM PEAK HOUR							
				Post-Process Volume (vph)	LOS	Delay (sec)	LOS	Delay (sec)	95th Queue (ft)	Post-Process Volume (vph)	LOS	Delay (sec)	LOS	Delay (sec)	95th Queue (ft)		
					Approach	Movement			Approach		Movement						
17	Berkeley Avenue/ Washington Avenue	Two-way Stop Control on Washington Avenue	Overall	455	A	9.6				385	A	9.2					
			Washington Ave WB-L		A	9.6					A	9.2					
			Washington Ave WB-T														
			Washington Ave WB-R	55			A	9.6	6	135			A	9.2	13		
			Berkeley Ave NB-L		0.0						0.0						
			Berkeley Ave NB-T	185						60							
			Berkeley Ave NB-R	5						5							
			Berkeley Ave SB-L		0.0						0.0						
Berkeley Ave SB-T	210			A		0.0		185				A	0.0				
Berkeley Ave SB-R																	
18	I-5 NB Ramps / Thorne Lane	RAB	Overall	1,945	A	7.0				2,295	B	11.9					
			I-5 Off-ramp EB-L	25	B	12.1	B	12.1	52	35	B	15.3	B	15.3	81		
			I-5 Off-ramp EB-T	0						5					B	15.3	81
			I-5 Off-ramp EB-R	220			B	12.1	52	275					B	15.3	81
			Thorne Ln NB-L	0	A	7.1				0	B	15.1					
			Thorne Ln NB-T	585			B	10.9	134	720					C	25.1	400
			Thorne Ln NB-R	320			A	0.0		475					A	0.1	
			Thorne Ln SB-L	275	A	5.4	A	5.5		460	A	5.6	A	5.7			
			Thorne Ln SB-T	520			A	5.3		325					A	5.3	
Thorne Ln SB-R	0						0										
19	I-5 SB Ramps / Thorne Lane	Signal	Overall	1,765	B	12.6				2,010	B	17.7					
			I-5 Off-ramp WB-L	475	B	13.5	B	13.7	163	265	B	13.0	B	14.5	104		
			I-5 Off-ramp WB-T	5						10					B	14.5	104
			I-5 Off-ramp WB-R	310			B	13.2	163	335					B	11.8	107
			Thorne Ln NB-L	430	A	9.3	A	9.3		655	B	12.4	B	12.4			
			Thorne Ln NB-T	180						100					B	12.4	
			Thorne Ln NB-R	0						0							
			Thorne Ln SB-L	0	B	16.3	B	16.5	96	0	C	28.2					
			Thorne Ln SB-T	320			B	14.7	96	520					C	28.9	256
Thorne Ln SB-R	45						125			C			25.6	256			
20	Thorne Lane/Union Avenue	Tee with Stop Sign on Union Avenue	Overall	190	A	9.6				370	B	12.0					
			Union Ave EB-L	5	A	9.6				30	B	12.0	B	12.0	6		
			Union Ave EB-T														
			Union Ave EB-R	0			A	9.6	1	0							
			Thorne Ln NB-L	30	A	5.8	A	5.8	2	80	A	2.5	A	2.5	5		
			Thorne Ln NB-T	10						160					A	0.0	
			Thorne Ln NB-R														
			Thorne Ln SB-L														
Thorne Ln SB-T	0						0		0.0								
Thorne Ln SB-R	145						100										
21	Thorne Lane / Union Avenue Loop	New RAB Intersection	Overall	860	A	6.9				1,140	A	9.1					
			Union Loop WB-L	10	A	4.7	A	4.7	3	155	A	6.5	A	6.5	33		
			Union Loop WB-T												A	6.5	33
			Union Loop WB-R	5			A	4.7	3	35							
			Thorne Ln NB-L		A	7.5					A	7.4					
			Thorne Ln NB-T	345			A	7.7	88	360					A	7.4	90
			Thorne Ln NB-R	145			A	6.9	88	75					A	7.4	90
			Thorne Ln SB-L	0	A	6.3	A	5.4	63	25	B	11.4	B	11.4	133		
			Thorne Ln SB-T	355			A	6.3	63	490					B	11.4	133
Thorne Ln SB-R																	
22	I-5 NB Ramps / Gravelly Lake Drive	Signal	Overall	1,405	C	26.1				1,845	D	50.2					
			I-5 Off-ramp EB-L	615	D	40.6	D	43.4	#483	790	D	53.0	D	53.0	#668		
			I-5 Off-ramp EB-T	0						5					D	52.5	#666
			I-5 Off-ramp EB-R	100			D	37.8	336	25							
			Gravelly Lk Dr NB-L	0	D	47.9				0	F	105.7					
			Gravelly Lk Dr NB-T	120			D	47.9	85	410					F	105.7	#356
			Gravelly Lk Dr NB-R	30			D	47.9	85	40							
			Gravelly Lk Dr SB-L	435	A	0.8	A	0.9	m0	555	A	2.9	A	3.0	m2		
			Gravelly Lk Dr SB-T	105			A	0.0	m0	20					A	0.0	m0
Gravelly Lk Dr SB-R	0						0										

### Intersection Analysis Summary - 2040 Revised Build

No.	Intersection	Control Type	Movement	AM PEAK HOUR						PM PEAK HOUR					
				Post-Process Volume (vph)	LOS	Delay (sec)	LOS	Delay (sec)	95th Queue (ft)	Post-Process Volume (vph)	LOS	Delay (sec)	LOS	Delay (sec)	95th Queue (ft)
				Approach			Movement			Approach			Movement		
23	I-5 SB Ramps / Gravelly Lake Drive	Signal	Overall	2,205	D	47.0				2,435	D	39.3			
			I-5 Off-ramp WB-L	0	D	50.5				5	E	58.9	E	58.0	17
			I-5 Off-ramp WB-T	0						0					
			I-5 Off-ramp WB-R	280			D	50.5	0	195			E	59.0	74
			Gravelly Lk Dr NB-L	65	A	4.3	A	4.3	35	25	B	14.1	B	14.1	m145
			Gravelly Lk Dr NB-T	670			A	4.3	35	1,175					
			Gravelly Lk Dr NB-R	0						0					
			Gravelly Lk Dr SB-L	0	E	72.6				0	E	68.4			
			Gravelly Lk Dr SB-T	540			E	78.4	#706	565			F	85.6	#820
			Gravelly Lk Dr SB-R	650			E	67.8	329	470			D	39.8	260
25	Gravelly Lake Drive / Pacific Highway	Signal	Overall	2,640	B	15.8				2,960	B	12.8			
			Pacific Hwy WB-L	145	D	52.6	D	54.5	92	240	E	63.9	E	66.2	159
			Pacific Hwy WB-T												
			Pacific Hwy WB-R	180			D	51.0	71	75			D	56.6	69
			Gravelly Lk Dr NB-L		A	4.4					A	6.5			
			Gravelly Lk Dr NB-T	920			A	4.5	78	1,310			A	6.7	56
			Gravelly Lk Dr NB-R	30			A	0.0	m0	60			A	2.4	m1
			Gravelly Lk Dr SB-L	320	B	15.1	E	55.2	327	245	A	7.0	C	20.9	161
			Gravelly Lk Dr SB-T	1,045			A	2.7	124	1,030			A	3.7	163
			Gravelly Lk Dr SB-R												

**Note:** For Two-way Stop Control Intersections - Overall LOS and delay is based on worse approach/movement  
 Synchro Analysis for Signalized and non-signalized intersections  
 Sidra Analysis for roundabouts