Appendix A – Existing

Intersection 1 D St/First St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	12	11	87.5%	40.1	35.1	D
ND	Through	15	13	89.3%	44.9	16.9	D
IND	Right Turn	28	30	107.1%	6.7	1.0	Α
	Subtotal	55	54	98.0%	26.9	7.3	С
	Left Turn	24	22	93.3%	51.2	11.1	D
CD	Through	20	21	102.5%	42.3	19.3	D
NB F	Right Turn	15	15	100.0%	6.8	4.4	Α
	Subtotal	59	58	98.1%	38.0	9.2	D
	Left Turn	3	2	76.7%	34.2	41.5	С
ED	Through	262	267	101.9%	15.1	8.8	В
LD	Right Turn	31	31	98.7%	24.8	23.6	С
	Subtotal	296	300	101.3%	40.1 35.1 44.9 16.9 6.7 1.0 26.9 7.3 51.2 11.1 42.3 19.3 6.8 4.4 38.0 9.2 34.2 41.5 15.1 8.8	В	
	Left Turn	31	32	104.5%	69.7	9.1	Е
\A/D	Through	437	436	99.7%	6.5	3.2	Α
VVD	Right Turn	50	50	99.0%	4.7	3.1	Α
	Subtotal	518	518	100.0%	11.2	3.1	В
	Total	928	930	100.2%	15.5	4.8	В

Intersection 2 E St-Richards Blvd/First St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	491	489	99.6%	28.7	9.6	С
ND	Through	86	90	104.1%	27.8	6.5	С
IND	Right Turn	229	219	95.4%	11.8	5.4	В
	Subtotal	806	797	98.9%	24.2	28.7 9.6 27.8 6.5 11.8 5.4	С
	Left Turn	1	1	60.0%	3.8	8.3	Α
CD	Through	85	85	99.4%	48.7	8.4	D
NB I	Right Turn	10	10	98.0%	9.4	9.0	Α
	Subtotal	96	95	98.9%	44.7	7.8	D
	Left Turn	9	9	95.6%	77.2	44.7	Е
ED	Through	23	23	100.0%	80.3	9.6 6.5 5.4 8.4 8.3 8.4 9.0 7.8 44.7 30.3 3.0 5.9 8.6 16.1 6.1 7.6	F
ED	Right Turn	282	287	101.9%	10.7	3.0	В
	Subtotal	314	319	101.6%	18.2	9.6 6.5 5.4 8.4 8.3 8.4 9.0 7.8 44.7 30.3 3.0 5.9 8.6 16.1 6.1 7.6	В
	Left Turn	130	130	100.3%	64.0	8.6	Е
\ \ /D	Through	17	18	107.1%	45.4	16.1	D
VVD	Right Turn	3	2	76.7%	3.4	6.1	Α
	Subtotal	150	151	100.6%	61.3	7.6	Е
	Total	1,366	1,362	99.7%	28.1	6.5	С

I-80 WB Off-Ramp/Olive Dr

Side-street Stop

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	2	1	50.0%	9.6	0.3	Α
NB	Through						
IND	Right Turn						
	Subtotal	2	1	50.0%	9.6	0.3	Α
	Left Turn						
CD	Through						
36	Right Turn						
	Subtotal						
	Left Turn						
FR	Through						
SB EB	Right Turn						
	Subtotal						
	Left Turn						
WB	Through	154	155	100.8%	0.5	0.1	Α
	Right Turn						
	Subtotal	154	155	100.8%	0.5	0.1	Α
	Total	156	156	100.1%	0.7	0.1	А

Intersection 4

Richards Blvd/Olive Dr

Signal

		Demand	Served Vo	Served Volume (vph) Total Delay (sec/			h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	80	80	99.5%	100.4	14.1	F
SB	Through	612	615	100.5%	29.4	9.7	С
IND	Right Turn	31	32	101.9%	17.4	15.2	В
	Subtotal	723	726	100.5%	37.7	8.5	D
	Left Turn	31	33	106.1%	38.1	7.1	D
CD	Through	440	448	101.8%	10.4	3.2	В
SB EB	Right Turn	26	23	89.2%	10.2	9.2	В
	Subtotal	497	504	101.4%	12.5	3.1	В
	Left Turn	37	36	97.3%	53.9	9.6	D
ED	Through	7	7	100.0%	43.1	14.1 9.7 15.2 8.5 7.1 3.2 9.2 3.1	D
ED	Right Turn	58	60	102.8%	25.2	12.6	С
	Subtotal	102	103	100.6%	nt Average Std. Dev. % 100.4 14.1 % 29.4 9.7 % 17.4 15.2 % 37.7 8.5 % 38.1 7.1 % 10.4 3.2 % 10.2 9.2 % 12.5 3.1 % 53.9 9.6 % 43.1 35.0 % 25.2 12.6 % 36.8 11.3 % 53.1 10.4 % 59.0 26.9 % 52.7 21.8 % 53.4 13.6	D	
	Left Turn	106	100	94.6%	53.1	10.4	D
\A/D	Through	18	17	95.0%	59.0	26.9	Е
VVD	Right Turn	157	146	92.7%	52.7	21.8	D
	Subtotal	281	263	93.6%	53.4	13.6	D
	Total	1,603	1,596	99.6%	32.7	3.3	С

Richards Blvd/I-80 WB Ramps

Uncontrolled

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
ND	Through	400	406	101.5%	13.6	15.3	В
Direction Movement Volume (vph) Average Percent Average Left Turn	0.4	Α					
	Subtotal	Movement Volume (vph) Average Percent Average Std. Dev. Turn ugh 400 406 101.5% 13.6 15.3 t Turn 359 354 98.5% 1.6 0.4 Subtotal 759 760 100.1% 8.2 8.6 Turn ugh 422 419 99.4% 0.6 0.1 t Turn 195 200 102.6% 1.4 0.3 Subtotal 617 619 100.4% 0.9 0.2 Turn ugh t Turn 179 180 100.5% 0.8 0.1 Turn ugh t Turn 389 389 100.0% 5.7 7.1 Subtotal 389 389 100.0% 5.7 7.1	Α				
	Left Turn						
CD	Through	422	419	99.4%	0.6	0.1	Α
	Right Turn	195	200	102.6%	1.4	0.3	Α
	Subtotal	617	619	100.4%	0.9	0.2	Α
	Left Turn						
FR	Direction Movement Volu Left Turn Through Right Turn Subtotal Left Turn Through Right Turn Subtotal Left Turn Through Right Turn Subtotal Left Turn Through Right Turn Through Right Turn Subtotal Left Turn Subtotal Left Turn Subtotal Left Turn Subtotal Subtotal						
LD	Right Turn	179	180	100.5%	0.8	0.1	Α
	Movement Volume (vph) Average Percent Average Std. Dev.	Α					
	Left Turn						
\M/R	Through						
WD	Right Turn	389	389	100.0%	5.7	7.1	Α
	Subtotal	389	389	100.0%	5.7	7.1	Α
	Total	1,944	1,948	100.2%	4.7	4.6	А

Intersection 6

Richards Blvd/I-80 EB Ramps

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB SB EB	Through	575	579	100.6%	25.0	2.2	С
IND	Right Turn	93	90	96.2%	13.5	1.8	В
	Subtotal	668	668	100.0%	23.4	1.8	С
	Left Turn	241	237	98.3%	51.1	3.6	D
CD	Through	360	364	101.1%	12.2	3.0	В
SB EB	Right Turn						
	Subtotal	601	601	100.0%	28.0	2.4	С
	Left Turn						
SB WB	Through						
LD	Right Turn			Inge Percent Average Std. Dev. 100.6% 25.0 2.2 96.2% 13.5 1.8 3 100.0% 23.4 1.8 4 98.3% 51.1 3.6 4 101.1% 12.2 3.0 5 28.0 2.4 1 97.9% 23.2 14.7 0 99.5% 45.5 16.6			
	Subtotal						
	Left Turn	429	430	100.2%	55.2	17.7	Ε
\A/B	Through						
WB	Right Turn	184	180	97.9%	23.2	14.7	С
	Subtotal	613	610	99.5%	45.5	16.6	D
	Total	1,882	1,879	99.8%	32.4	7.1	С

Vissim Post-Processor

Average Results from 10 Runs

Volume and Delay by Movement

Lincoln 40 EIR
Existing Conditions
AM Peak Hour

Intersection 7

Research Park Dr/Richards Blvd-Cowell Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	64	63	98.8%	51.4	9.1	D
NID	Through	6	5	88.3%	38.3	34.3	D
IND	Right Turn	volume (vph) Average Percent Average Std. D 64 63 98.8% 51.4 9.1 6 5 88.3% 38.3 34. 30 30 101.0% 8.1 4.6 100 99 98.8% 37.3 7.7 22 24 110.5% 53.8 13. 19 20 102.6% 40.6 14. 82 78 94.9% 17.0 9.7 123 122 98.9% 28.4 9.6 187 187 99.9% 46.8 7.0 469 472 100.6% 25.3 5.4 133 136 102.4% 22.6 5.9 789 795 100.8% 30.1 6.0 487 487 99.9% 23.1 4.3 20 18 90.0% 8.9 8.1 537 535 99.6% 24.9 4.8 <td>4.6</td> <td>Α</td>	4.6	Α			
	Subtotal	100	99	98.8%	37.3	7.7	D
	Left Turn	22	24	110.5%	53.8	13.6	D
CD	Through	19	20	102.6%	40.6	14.0	D
NB SB EB	Right Turn	82	78	94.9%	17.0	9.7	В
	Subtotal	123	122	98.9%	28.4	9.6	С
	Left Turn	187	187	99.9%	46.8	7.0	D
FR	Through	469	472	100.6%	25.3	9.1 34.3 4.6 7.7 13.6 14.0 9.7 9.6	С
LD	Right Turn	133	136	102.4%	22.6	5.9	С
	Subtotal	789	795	100.8%	30.1	Std. Dev. I 9.1 34.3 4.6 7.7 13.6 14.0 9.7 9.6 7.0 5.4 5.9 6.0 16.7 4.3 8.1 4.8	С
	Left Turn	30	31	101.7%	59.7	16.7	E
\A/D	Through	487	487	99.9%	23.1	4.3	С
VVD	Right Turn	20	18	90.0%	8.9	8.1	Α
	Subtotal	537	535	99.6%	24.9	4.8	С
	Total	1,549	1,551	100.1%	28.6	4.8	С

Intersection 1 D St/First St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	27	26	95.6%	26.5	7.0	С
NB	Through	Volume (vph) Average 27 26 41 41 61 64 129 133 85 83 29 29 21 22 135 134 14 13 374 383 59 58 447 453 77 74 308 313 48 49 433 435	41	100.0%	30.8	5.4	С
IND	Right Turn	61	64	104.4%	8.4	7.0	Α
	Subtotal	129	26 41	101.2%	19.4	3.7	В
	Left Turn	85	83	97.6%	24.3	4.5	С
CD	Through	29	29	98.6%	23.6	6.2	С
SB	Right Turn	21	22	106.2%	8.0	6.1	Α
	Subtotal	135	134	99.2%	21.1	3.4	С
	Left Turn	14	13	90.7%	75.0	Std. Dev. 7.0 5.4 3.3 3.7 4.5 6.2 6.1 3.4 27.9 11.9 13.9 12.0 5.9 3.2 2.7 2.4	Е
EB	Through	374	383	102.3%	47.7	11.9	D
ED	Right Turn	59	58	97.5%	47.0	13.9	D
	Subtotal	447	453	Percent Average 95.6% 26.5 100.0% 30.8 104.4% 8.4 101.2% 19.4 97.6% 24.3 98.6% 23.6 106.2% 8.0 99.2% 21.1 90.7% 75.0 102.3% 47.7	12.0	D	
	Left Turn	77	74	96.5%	29.8	5.9	С
WB	Through	308	311	101.0%	10.1	3.2	В
VVD	Right Turn	48	49	102.9%	7.8	2.7	Α
	Subtotal	433	435	100.4%	13.2	2.4	В
	Total	1,144	1,152	100.7%	28.6	5.6	С

Intersection 2 E St-Richards Blvd/First St Signal

		Demand	Demand Served Volume (vph) Total				h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	376	379	100.7%	13.4	4.1	В
ND	Through	108	108	100.3%	10.3	4.3	В
IND	Right Turn	250	243	97.0%	4.2	1.1	Α
_	Subtotal	734	730	99.4%	9.7	2.8	Α
	Left Turn	6	6	101.7%	55.1	34.4	Е
CD	Through	166	168	101.1%	61.5	5.2	Е
NB SB EB	Right Turn	21	21	98.1%	34.3	16.6	С
	Subtotal	193	195	100.8%	58.6	5.3	Е
	Left Turn	10	10	96.0%	67.4	24.1	Е
ED	Through	53	56	105.3%	77.9	4.1 4.3 1.1 2.8 34.4 5.2 16.6 5.3	E
LD	Right Turn	457	465	101.7%	13.4	3.0	В
	Subtotal	520	530	101.9%	21.1	ge Std. Dev. LC 4.1 E 4.3 E 1.1 A 2.8 A 34.4 E 5.2 E 16.6 C 5.3 E 24.1 E 21.0 E 3.0 E 4.1 C 15.2 E 14.0 E 32.0 C 13.0 E	С
	Left Turn	201	200	99.3%	72.3	15.2	Е
\A/D	Through	36	36	99.2%	44.6	14.0	D
WB	Right Turn	6	6	95.0%	30.9	32.0	С
	Subtotal	243	241	99.1%	67.4	13.0	Е
	Total	1,690	1,695	100.3%	27.9	2.1	С

I-80 WB Off-Ramp/Olive Dr

Side-street Stop

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	7	8	112.9%	9.6	0.7	Α
NB	Through						
	Right Turn						
	Subtotal	7	8	112.9%	9.6	0.7	Α
	Left Turn						
CD	Through						
30	Right Turn						
	Subtotal						
	Left Turn						
ED	Through						
NB SB EB	Right Turn						
	Subtotal						
	Left Turn						
WB	Through	144	143	99.5%	0.5	0.1	Α
	Right Turn						
	Subtotal	144	143	99.5%	0.5	0.1	Α
	Total	151	151	100.1%	1.0	0.1	Α

Intersection 4

Richards Blvd/Olive Dr

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	46	50	108.5%	73.6	11.9	E
NB	Through	536	539	100.5%	25.4	6.8	С
IND	Right Turn	52	50	96.3%	5.2	2.4	Α
	Subtotal	634	639	100.8%	28.3	3.6 11.9 5.4 6.8 5.2 2.4 3.3 7.0 3.2 6.5 5.6 3.3 5.3 7.4 9.8 3.9 5.3 12.5 1.7 33.9 3.7 10.8 4.5 9.6 1.9 55.0 9.4 56.1 5.4 44.7 1.3 46.8	С
	Left Turn	92	92	100.3%	58.2	6.5	Е
CD	Through	698	704	100.9%	15.6	3.3	В
SB	Right Turn	34	35	103.2%	15.3	7.4	В
	Subtotal	824	831	100.9%	19.8	rage Std. Dev. 3.6 11.9 3.4 6.8 2 2.4 3.3 7.0 3.2 6.5 3.6 3.3 3.3 7.4 3.8 3.9 3.7 10.8 3.7 10.8 3.5 9.6 1.9 55.0 3.4 44.7 3.3 46.8	В
	Left Turn	32	31	96.6%	55.3	12.5	Ε
EB	Through	5	5	102.0%	31.7	Std. Dev. 11.9 6.8 2.4 7.0 6.5 3.3 7.4 3.9 12.5 33.9 10.8 9.6 55.0 56.1 44.7 46.8	С
LB	Right Turn	74	74	99.7%	23.7	10.8	С
	Subtotal	111	110	98.9%	Average Std. Dev. 6 73.6 11.9 6 25.4 6.8 5.2 2.4 6 28.3 7.0 6 58.2 6.5 6 15.6 3.3 6 15.3 7.4 6 19.8 3.9 55.3 12.5 31.7 33.9 23.7 10.8 34.5 9.6 121.9 55.0 79.4 56.1 65.4 44.7 91.3 46.8	С	
	Left Turn	142	135	94.8%	121.9	55.0	F
WB	Through	17	17	97.1%	79.4	56.1	Ε
VVD	Right Turn	166	158	95.4%	65.4	44.7	Е
	Subtotal	325	309	95.2%	91.3	46.8	F
	Total	1,894	1,889	99.8%	35.7	8.4	D

Richards Blvd/I-80 WB Ramps

Uncontrolled

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
ND	Through	447	453	101.3%	6.7	2.6	Α
IND	Right Turn	437	431	98.6%	2.3	0.4	Α
	Subtotal	884	884	100.0%	6.7 2.6	Α	
	Left Turn						_
CD	Through	635	636	100.2%	0.7	0.2	Α
NB SB EB	Right Turn	321	318	99.2%	1.4	0.3	Α
	Subtotal	956	(vph) Average 7 453 7 431 4 884 5 636 1 318 6 954 0 90 0 90 1 221 1 221 1 221	99.8%	0.9	0.2	Α
	Left Turn						
FR	Through						
LD	Right Turn	90	90	100.1%	0.7	0.1	Α
	Subtotal	90	90	100.1%	0.7	0.1	А
	Left Turn						
\M/R	Through						
WD	Right Turn	221	221	99.9%	1.0	0.5	Α
	Subtotal	221	221	99.9%	1.0	0.5	Α
	Total	2,151	2,149	99.9%	2.5	0.6	Α

Intersection 6

Richards Blvd/I-80 EB Ramps

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	706	711	100.7%	15.7	4.0	В
IND	Right Turn	126	126	99.7%	8.7	2.6	Α
	Subtotal	832	837	100.6%	14.5	3.6	В
	Left Turn	189	190	100.7%	63.8	6.5	Е
SB	Through	536	534	99.5%	9.9	1.5	Α
36	Right Turn						
	Subtotal	725	724	99.8%	24.6	2.8	С
	Left Turn						
EB	Through						
LD	Right Turn						
	Subtotal						
	Left Turn	552	541	98.0%	158.6	62.3	F
WB	Through						
VVD	Right Turn	178	172	96.5%	131.2	62.4	F
	Subtotal	730	713	97.7%	151.8	63.0	F
	Total	2,287	2,273	99.4%	63.3	21.9	Е

Vissim Post-Processor

Average Results from 10 Runs

Volume and Delay by Movement

Lincoln 40 EIR
Existing Conditions
PM Peak Hour

Intersection 7

Research Park Dr/Richards Blvd-Cowell Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	92	93	101.2%	53.2	9.1	D
NB	Through	25	25	98.4%	36.1	16.5	D
IND	Right Turn	40	40	101.0%	13.4	5.8	В
	Subtotal	157	158	100.7%	38.8	8.7	D
	Left Turn	37	38	101.4%	45.9	15.2	D
SB	Through	10	10	100.0%	47.8	29.0	D
SD	Right Turn	126	125	99.3%	12.1	5.9	В
	Subtotal	173	173	99.8%	21.2	5.0	С
	Left Turn	304	305	100.2%	58.0	3.9	Е
EB	Through	726	718	98.8%	14.5	4.6	В
LD	Right Turn	58	57	98.3%	9.3	2.7	Α
	Subtotal	1,088	1,079	99.2%	27.1	3.4	С
	Left Turn	25	23	93.6%	64.6	23.7	Е
WB	Through	530	534	100.7%	31.8	6.7	С
VVD	Right Turn	35	33	93.7%	8.7	9.3	Α
	Subtotal	590	590	99.9%	32.3	7.5	С
	Total	2,008	2,000	99.6%	29.1	3.5	С

Lincoln 40 EIR
Existing Conditions
AM Peak Hour

Intersection 5 Richards Blvd/I-80 WB Ramps Uncontrolled

		Storage		Average Queue (ft)				Queue (ft)		Exceeds	
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
110	Through	200	1	0	0	1	58	2	56	61	NO
	Right Turn	1,120	1	0	0	1	58	2	56	61	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn										
30	Through	1,280	0	0	0	0	110	17	83	141	NO
	Right Turn	1,800	0	0	0	0	32	26	0	94	NO
	Second Right										
	U Turn										
	Second Left										
ЕВ	Left Turn										
LD	Through										
	Right Turn	560	0	0	0	0	28	16	0	49	NO
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn										
VVD	Through										
ŀ	Right Turn	1,500	0	0	0	0	0	0	0	0	NO
	Second Right										

Lincoln 40 EIR
Existing Conditions
AM Peak Hour

Intersection 6 Richards Blvd/I-80 EB Ramps Signal

		Storage		_	Queue (ft)				Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
ND	Through	500	50	4	44	59	336	31	292	390	NO
	Right Turn	500	36	4	30	45	307	31	263	361	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn	360	45	3	41	50	173	25	145	224	NO
36	Through	1,300	13	2	10	16	177	32	115	223	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
ED	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn	160	164	28	128	228	793	174	554	1,180	AVG
VVD	Through										
	Right Turn	1,260	8	1	7	9	131	25	86	161	NO
	Second Right										

Lincoln 40 EIR
Existing Conditions
PM Peak Hour

Intersection 5 Richards Blvd/I-80 WB Ramps Uncontrolled

		Storage	Average Queue (ft)			Maximum Queue (ft)				Exceeds	
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn Second Left										
NB	Left Turn Through	200	2	0	1	2	64	10	57	91	NO
	Right Turn Second Right	1,120	2	0	1	2	64	10	57	91	NO
SB	U Turn Second Left Left Turn										
36	Through Right Turn Second Right	1,280 1,800	0	0	0	1 0	117 0	10 0	109 0	139 0	NO NO
EB	U Turn Second Left Left Turn Through Right Turn	560	0	0	0	0	0	0	0	0	NO
WB	Second Right U Turn Second Left Left Turn Through Right Turn Second Right	1,500	0	0	0	0	0	0	0	0	NO

Lincoln 40 EIR
Existing Conditions
PM Peak Hour

Intersection 6 Richards Blvd/I-80 EB Ramps Signal

		Storage		Average Queue (ft)			Maximum	Queue (ft)		Exceeds	
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
NB	U Turn Second Left Left Turn										
IVD	Through	500	39	5	34	51	355	35	311	410	NO
	Right Turn Second Right	500	28	4	24	39	326	35	281	381	NO
	U Turn Second Left										
SB	Left Turn	360	45	3	42	50	154	16	137	181	NO
	Through	1,300	18	2	16	21	195	41	155	268	NO
	Right Turn										
	Second Right										
	U Turn Second Left										
EB	Left Turn										
LD	Through										
	Right Turn Second Right										
	U Turn										
	Second Left	4.60	007	205	525	4 420	4.640	42	4.524	4.605	A) (C
WB	Left Turn	160	807	295	525	1,439	1,649	43	1,534	1,695	AVG
	Through Right Turn Second Right	1,260	159	312	8	994	604	735	116	1,695	NO

Project Freeway Segment	Lincoln 40 EIR Eastbound I-80 Old Davis Rd to Richa	rds Blvd			
Alternative	Existing				
Time period	AM Peak Hour				
	Flow Ir	puts and Adjustmen	ts		
Volume, V			4,323	vph	
Peak-hour factor, PHF			0.92		
Peak 15-min volume, v ₁₅			1,175	veh	
Trucks and buses			8.8%		
Recreational vehicles			0.0%		
Terrain type			Level		
Grade				:	
Length			4.5	mi	
Trucks and buses PCE, E _T Recreational vehicle PCE, E _F			1.5 1.2		
Heavy vehicle adjustment, f	•		0.958		
Driver popoulation factor, f			1.00		
Flow rate, v_p	•		4,906	pcph	
Number of lanes, N			3	рерп	
realiser of faires, it			3		
	Speed I	nputs and Adjustmer	nts		
Lane width			12.0	ft	
Right-side lateral clearance			>6	ft	
Total ramp density, TRD			7.00	ramps/mi	
Lane width adjustment, f _{LW}			0.0	mph	
Lateral clearance adjustmen	nt, f _{ic}		0.0	mph	
TRD adjustment	, 10		16.5	mph	
Calculated free-flow speed,	FFS		58.9	mph	
Measured free-flow speed,				mph	
Free-flow speed curve			65	mph	
	Capacity Che	cks for Segments witl	h Ramps		
	<u>Actual</u>	<u>Maximum</u>		Violation?	
Entering freeway volume		:ph	pcph		
Exiting freeway volume	po	ph	pcph		
On-ramp volume	pc	ph	pcph		
Off-ramp volume	po	ph	pcph		
	LOS and	Performance Measu	ires		
Flow rate, v _p			1,635	pcphpl	
Average passenger-car spee			64.2	mph	
Volume-to-capacity ratio, v	/c		0.70		
Density, D			25.5	pcpmpl	
Level of service, LOS			С		

Project	Lincoln 40 EIR					
Freeway	Eastbound I-80					
Segment	Richards Blvd t	o Mace Blvd				
Alternative	Existing					
Time period	AM Peak Hour					
		Flow Inputs an	nd Adjustments			
Volume, V				4,044	vph	
Peak-hour factor, PHF				0.92		
Peak 15-min volume, v ₁₅				1,099	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length					mi	
Trucks and buses PCE, E _T				1.5		
Recreational vehicle PCE, E _R				1.2		
Heavy vehicle adjustment, f				0.958		
Driver popoulation factor, f	•			1.00	ncnh	
Flow rate, v _p Number of lanes, N				4,589 3	pcph	
Number of lanes, N				3		
	S	peed Inputs a	nd Adjustments			
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				7.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmen	t, f _{LC}			0.0	mph	
TRD adjustment				16.5	mph	
Calculated free-flow speed,	FFS			58.9	mph	
Measured free-flow speed, I	FFS				mph	
Free-flow speed curve				65	mph	
	Capacit	ty Checks for S	Segments with Ra	mps		
- · · · · · · · · · · · · · · · · · · ·	<u>Actual</u>		<u>Maximum</u>		<u>Violation?</u>	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume Off-ramp volume		pcph		pcph		
On-ramp volume		pcph		pcph		
	LC	OS and Perforn	mance Measures			
Flow rate, v _p				1,530	pcphpl	
Average passenger-car spee	d, S			64.8	mph	
Volume-to-capacity ratio, v/				0.65		
Density, D				23.6	pcpmpl	
Level of service, LOS				С		

HCM 2010: Freeway Basic Segment

Basic Operational Analysis

Project	Lincoln 40 EIR					
Freeway	Westbound I-8					
Segment	Mace Blvd to C	live Drive				
Alternative	Existing					
Time period	AM Peak Hour					
	ſ	low Inputs ar	nd Adjustments			
Volume, V				4,883	vph	
Peak-hour factor, PHF				0.96		
Peak 15-min volume, v ₁₅				1,272	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length					mi	
Trucks and buses PCE, E_T				1.5		
Recreational vehicle PCE, E_R				1.2		
Heavy vehicle adjustment, f	HV			0.958		
Driver popoulation factor, f	•			1.00		
Flow rate, v _p				5,310	pcph	
Number of lanes, N				3		
	S	peed Inputs a	nd Adjustments			
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				10.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmen	t, f _{LC}			0.0	mph	
TRD adjustment				22.3	mph	
Calculated free-flow speed,	FFS			53.1	mph	
Measured free-flow speed, I	FFS				mph	
Free-flow speed curve				65	mph	
	Capacit	ty Checks for S	Segments with Ra	mps		
	<u>Actual</u>		<u>Maximum</u>		Violation?	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
	LC	S and Perforr	mance Measures			
Flow rate, v _p				1,770	pcphpl	
Average passenger-car spee	d. S			63.1	mph	
Volume-to-capacity ratio, v/				0.75		
Density, D	-			28.1	pcpmpl	
Level of service, LOS				D	P. C. L. L.	
,						

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-80 Olive Dr to Richa Existing AM Peak Hour					
	7 IIVI T CUR TIOUI					
	Flo	ow Inputs ar	nd Adjustments	S		
Volume, V				4,729	vph	
Peak-hour factor, PHF				0.96		
Peak 15-min volume, v ₁₅				1,232	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length				1 [mi	
Trucks and buses PCE, E _T Recreational vehicle PCE, E _F				1.5 1.2		
Heavy vehicle adjustment, f				0.958		
Driver popoulation factor, f				1.00		
Flow rate, v _p	r			5,143	pcph	
Number of lanes, N				3		
	Spe	eed Inputs a	nd Adjustment	S		
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				10.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmen	nt, f _{LC}			0.0	mph	
TRD adjustment				22.3	mph	
Calculated free-flow speed,				53.1	mph	
Measured free-flow speed,	FFS				mph	
Free-flow speed curve				65	mph	
	Capacity	Checks for S	Segments with	Ramps		
	<u>Actual</u>	_	<u>Maximum</u>		<u>Violation?</u>	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume Off-ramp volume		pcph		pcph		
On-ramp volume		pcph		pcph		
	LOS	and Perforr	mance Measure	es		
Flow rate, v _p				1,714	pcphpl	
Average passenger-car spec	ed. S			63.6	mph	
Volume-to-capacity ratio, v				0.73		
Density, D	, -			27.0	pcpmpl	
Level of service, LOS				D	in the sign	

Project Freeway Segment Alternative	Lincoln 40 EIR Westbound I-80 Richards Blvd to Existing		d			
Time period	AM Peak Hour					
	FI	ow Inputs ar	nd Adjustments			
		· ·	,			-
Volume, V				4,715 0.96	vph	
Peak-hour factor, PHF Peak 15-min volume, v ₁₅				1,228	veh	
Trucks and buses				8.8%	VCII	
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length					mi	
Trucks and buses PCE, E _T				1.5		
Recreational vehicle PCE, E _F	l			1.2		
Heavy vehicle adjustment, f	HV			0.958		
Driver popoulation factor, f	P			1.00		
Flow rate, v _p				5,128	pcph	
Number of lanes, N				4		
	Sp	eed Inputs a	nd Adjustments			
Lana and dalah				42.0	£,	
Lane width				12.0 >6	ft ft	
Right-side lateral clearance Total ramp density, TRD				10.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmen	nt. f.c			0.0	mph	
TRD adjustment				22.3	mph	
Calculated free-flow speed,	FFS			53.1	mph	
Measured free-flow speed,					mph	
Free-flow speed curve				65	mph	
	•					
	Capacity	cnecks for S	Segments with Ra	mps		-
	<u>Actual</u>		<u>Maximum</u>		Violation?	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
	LOS	S and Perforr	mance Measures			
Flow rate w				1 202	n anh = l	
Flow rate, v _p	.d C			1,282	pcphpl	
Average passenger-car spee Volume-to-capacity ratio, v,				65.0 0.55	mph	
Density, D				19.7	pcpmpl	
Level of service, LOS				19.7 C	ρεριτιρι	
				•		

Flow Inputs and Adjustments Flow Inputs and Adjustments Flow Inputs and Adjustments Volume, V Peak-hour factor, PHF Peak 15-min volume, v ₁₅ 1,176 Peak 15-min volume, v ₁₅ Peak 15-min volume Peak 10-92 Peak 15-min volume Peak 11-76 Peak 11-76 Peak 11-76 Peak 15-min volume Peak 11-76 Peak 15-min volume Peak 15-m	Project Freeway Segment	Lincoln 40 EIR Eastbound I-80 Old Davis Rd to Richards B	lvd	
Flow Inputs and Adjustments Volume, V Peak-hour factor, PHF Peak 15-min volume, v _{1.5} Peak 11,176 Peak 15-min volume Grade Level Grade Level Grade Length Trucks and buses PCE, E _T Pecreational vehicle PCE, E _R Pecreational vehicle PCE, E _R Peak 1.2 Peak 1.3 Priver popolulation factor, f _F Porver popolulatio		•		
Volume, V Peak-hour factor, PHF Peak-hour fa				
Peak-hour factor, PHF Peak 15-min volume, v ₁₅ Trucks and buses Recreational vehicles Grade Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Length Driver popoulation factor, f _{re} Right-side lateral, v _b Rumber of lanes, N Speed Inputs and Adjustments Lane width Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Right-side lateral clearance Total ramp density, TRD Total ramp density, Troble pcph Total ramp density, Troble		Flow Inputs a	and Adjustments	
Peak 15-min volume, v ₁₅ Trucks and buses Recreational vehicles Grade Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Recreational vehicle pce, PC, PC, PC, PC, PC, PC, PC, PC, PC, PC				vph
Trucks and buses Recreational vehicles Recreational vehicles Grade Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Heavy vehicle adjustment, f _{tw} Driver popoulation factor, f _P Flow rate, v _p Number of lanes, N Speed Inputs and Adjustments Speed Inputs and Adjustments Speed Inputs and Adjustments Lane width Right-side lateral clearance Total ramp density, TRD Journal of the speed inputs and Adjustments Lane width adjustment, f _{tw} Lateral clearance adjustment, f _{tw} Lateral clearance adjustment, f _{tc} TRD adjustment Calculated free-flow speed, FFS Measured free-flow speed, FFS Measured free-flow speed, FFS Seed Inputs and Adjustment 12.0 ft ft ft Total ramp density, TRD 7.00 ramps/mi Lateral clearance adjustment, f _{tc} 0.0 mph TRD adjustment Calculated free-flow speed, FFS Seed Inputs and Adjustment Fig. Oncomph Temps/mi Lateral clearance 16.5 mph Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Los and Performance Measures				veh
Recreational vehicles Terrain type Grade Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Retail dejustment, f _{HV} Diver popoulation factor, f _P Number of lanes, N Speed Inputs and Adjustments Speed Inputs and Adjustments Lane width Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LV} Division ramps/mi Lane width adjustment, f _{LV} Division ramps/mi Lane width adjustment, f _{LV} Division ramps/mi Lane width adjustment Lane width L				VEII
Grade Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _R 1.2 Heavy vehicle adjustment, f _{IrV} Driver popoulation factor, f _P Flow rate, v _p Number of lanes, N Speed Inputs and Adjustments Lane width Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Lateral clearance adjustment, f _{LC} TRD adjustment Lateral clearance adjustment, f _{LC} RIGH TRD Seed Inputs and Adjustment Lateral clearance adjustment, f _{LC} Do mph TRD adjustment Calculated free-flow speed, FFS Free-flow speed, FFS Free-flow speed curve Actual Maximum Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps LOS and Performance Measures				
Grade Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Heavy vehicle adjustment, f _{ttV} Driver popoulation factor, f _P Flow rate, v _p Number of lanes, N Speed Inputs and Adjustments Lane width Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{ttW} Lateral clearance adjustment, f _{ttC} TRD adjustment TRD adjustment Calculated free-flow speed, FFS Measured free-flow speed, FFS Free-flow speed curve Actual Maximum Capacity Checks for Segments with Ramps Maximum Capph Dryh Dryh Dryh Dryh Dryh Dryh Dryh Dry				
Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Recreational vehicle PCE, E _R Recreational vehicle PCE, E _R Recreational vehicle adjustment, f _{hW} Driver popoulation factor, f _p Flow rate, v _p Number of lanes, N Speed Inputs and Adjustments Lane width Right-side lateral clearance Total ramp density, TRD Total ramp density, TRD Lane width adjustment, f _{LW} Do mph Lateral clearance adjustment, f _{LC} TRD adjustment TRD adjustment Calculated free-flow speed, FFS Free-flow speed, FFS Free-flow speed curve Actual Maximum Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps LOS and Performance Measures LOS and Performance Measures			2010.	
Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Recreational vehicle PCE, E _R Recreational vehicle PCE, E _R Recreational vehicle adjustment, f _{hW} Driver popoulation factor, f _p Flow rate, v _p Number of lanes, N Speed Inputs and Adjustments Lane width Right-side lateral clearance Total ramp density, TRD Total ramp density, TRD Lane width adjustment, f _{LW} Do mph Lateral clearance adjustment, f _{LC} TRD adjustment TRD adjustment Calculated free-flow speed, FFS Free-flow speed, FFS Free-flow speed curve Actual Maximum Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps LOS and Performance Measures LOS and Performance Measures	Length			mi
Heavy vehicle adjustment, f _{IrV} 0.958 Driver popoulation factor, f _P 1.00 Flow rate, v _p 4,909 pcph Number of lanes, N 3 Speed Inputs and Adjustments Lane width 12.0 ft ft Right-side lateral clearance >6 ft Total ramp density, TRD 7.00 ramps/mi Lane width adjustment, f _{LW} 0.0 mph Lateral clearance adjustment, f _{LC} 0.0 mph TRD adjustment 16.5 mph Calculated free-flow speed, FFS 58.9 mph Measured free-flow speed, FFS 58.9 mph Tree-flow speed curve 65 mph Capacity Checks for Segments with Ramps Actual Maximum Violation? Entering freeway volume pcph pcph pcph On-ramp volume pcph pcph pcph Dff-ramp volume pcph pcph pcph Dff-ramp volume pcph pcph pcph Dff-ramp volume pcph pcph pcph pcph Dff-ramp volume pcph pcph pcph pcph pcph pcph pcph pcp	•		1.5	
Driver popoulation factor, f _p Flow rate, v _p Number of lanes, N Speed Inputs and Adjustments Lane width Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Lateral clearance adjustment, f _{LW} Lateral clearance adjustment, f _{LW} Lateral clearance adjustment TRD adjustment Calculated free-flow speed, FFS Free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Los and Performance Measures LOS and Performance Measures	Recreational vehicle PCE, E _R		1.2	
Flow rate, v _p Number of lanes, N Speed Inputs and Adjustments Lane width Right-side lateral clearance Total ramp density, TRD Total ramps/mi Tamps/mi Tamps/mi Tamp diustment Total ramp density, TRD Total ramp density, TRD Total ramp density, TRD Total ramp density, TRD Total ramps/mi Total ramps	Heavy vehicle adjustment, f	HV	0.958	
Speed Inputs and Adjustments Speed Inputs and Adjustments	Driver popoulation factor, f		1.00	
Lane width Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Lane width adjustment, f _{LW} Lane width adjustment, f _{LW} Lateral clearance adjustment, f _{LC} O.0 mph TRD adjustment TRD adjustment Calculated free-flow speed, FFS Free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps LOS and Performance Measures	•		4,909	pcph
Lane width Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Lane width adjustment, f _{LC} Total ramp density, TRD Lane width adjustment, f _{LC} Total ramp density, TRD TRD adjustment, f _{LC} TRD adjustment Calculated free-flow speed, FFS Measured free-flow speed, FFS Free-flow speed curve TRD adjustment Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Los and Performance Measures Los and Performance Measures	Number of lanes, N		3	
Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Lane width adjustment, f _{LC} Total ramp density, TRD Lane width adjustment, f _{LW} Lateral clearance adjustment, f _{LC} TRD adjustment Calculated free-flow speed, FFS Measured free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Los and Performance Measures		Speed Inputs	and Adjustments	
Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Lane width adjustment, f _{LC} Lateral clearance adjustment, f _{LC} TRD adjustment Calculated free-flow speed, FFS Measured free-flow speed, FFS Free-flow speed curve TRD adjustment Calculated free-flow speed, FFS Measured free-flow speed, FFS Measured free-flow speed curve Tapacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Los and Performance Measures				
Total ramp density, TRD Lane width adjustment, f _{LW} Lateral clearance adjustment, f _{LC} TRD adjustment Calculated free-flow speed, FFS Calculated free-flow speed, FFS Free-flow speed curve Tagacity Checks for Segments with Ramps Actual Maximum Violation?				
Lane width adjustment, f _{LW} 0.0 mph Lateral clearance adjustment, f _{LC} 0.0 mph TRD adjustment 16.5 mph Calculated free-flow speed, FFS 58.9 mph Measured free-flow speed, FFS mph Free-flow speed curve 65 mph Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Actual Maximum Violation? Entering freeway volume pcph pcph Exiting freeway volume pcph pcph On-ramp volume pcph pcph Off-ramp volume pcph pcph Off-ramp volume pcph pcph LOS and Performance Measures	-			
Lateral clearance adjustment, f _{LC} TRD adjustment Calculated free-flow speed, FFS Measured free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Los and Performance Measures				
TRD adjustment Calculated free-flow speed, FFS Measured free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Maximum Violation? Entering freeway volume Exiting freeway volume On-ramp volume Off-ramp volume DCS and Performance Measures		a+ f		· ·
Calculated free-flow speed, FFS Measured free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Actual Maximum Violation? Entering freeway volume pcph pcph Exiting freeway volume pcph pcph On-ramp volume pcph pcph Off-ramp volume pcph pcph Off-ramp volume pcph pcph LOS and Performance Measures		it, i _{LC}		· ·
Measured free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Actual Maximum Violation? Entering freeway volume pcph pcph Exiting freeway volume pcph pcph On-ramp volume pcph pcph Off-ramp volume pcph pcph LOS and Performance Measures		EEC		· ·
Entering freeway volume Exiting freeway volume Con-ramp volume Don-ramp volume			36.9	· ·
Capacity Checks for Segments with Ramps Actual Maximum Violation? Entering freeway volume pcph pcph Exiting freeway volume pcph pcph On-ramp volume pcph pcph Off-ramp volume pcph pcph Dff-ramp volume pcph pcph		113	65	·
Actual Maximum Violation? Entering freeway volume pcph pcph Exiting freeway volume pcph pcph On-ramp volume pcph pcph Off-ramp volume pcph pcph LOS and Performance Measures	Thee now speed edite		03	
Entering freeway volume pcph pcph Exiting freeway volume pcph pcph On-ramp volume pcph pcph Off-ramp volume pcph pcph Doff-ramp volume pcph pcph Doff-ramp volume pcph pcph		Capacity Checks for	Segments with Ramps	_
Entering freeway volume pcph pcph Exiting freeway volume pcph pcph On-ramp volume pcph pcph Off-ramp volume pcph pcph Doff-ramp volume pcph pcph Doff-ramp volume pcph pcph		Actual	Maximum	Violation?
Exiting freeway volume pcph pcph On-ramp volume pcph pcph Off-ramp volume pcph pcph LOS and Performance Measures	Entering freeway volume			
On-ramp volume pcph pcph Off-ramp volume pcph pcph LOS and Performance Measures				
LOS and Performance Measures				
	Off-ramp volume	pcph	pcph	
		LOS and Perfo	rmance Measures	
Flow rate, v _p 1,636 pcphpl				
	r .		1,636	pcphpl
Average passenger-car speed, S 64.2 mph				mph
Volume-to-capacity ratio, v/c 0.70		′ c	0.70	
Density, D 25.5 pcpmpl				pcpmpl
Level of service, LOS	Level of service, LOS		С	

Project	Lincoln 40 EIR										
Freeway Segment	Eastbound I-80 Richards Blvd to I	Mace Blud									
Alternative	Existing	viace bivu									
Time period	PM Peak Hour										
	· · · · · · · · · · · · · · · · · · ·										
Flow Inputs and Adjustments											
Volume, V				3,911	vph						
Peak-hour factor, PHF				0.92							
Peak 15-min volume, v_{15}				1,063	veh						
Trucks and buses				8.8%							
Recreational vehicles				0.0%							
Terrain type				Level							
Grade											
Length					mi						
Trucks and buses PCE, E_T				1.5							
Recreational vehicle PCE, E_R				1.2							
Heavy vehicle adjustment, f				0.958							
Driver popoulation factor, f				1.00							
Flow rate, v _p				4,438	pcph						
Number of lanes, N				3							
	Spe	ed Inputs a	nd Adjustments								
Laura and dalah				42.0	r.						
Lane width				12.0	ft ft						
Right-side lateral clearance				>6 7.00							
Total ramp density, TRD Lane width adjustment, f _{LW}				7.00 0.0	ramps/mi mph						
Lateral clearance adjustmen	+ f			0.0	mph						
TRD adjustment	c, ilc			16.5	mph						
Calculated free-flow speed,	FFS			58.9	mph						
Measured free-flow speed, I				30.3	mph						
Free-flow speed curve	.5			65	mph						
Tree now speed curve				03	p.i.						
	Capacity (Checks for S	Segments with Ra	mps							
	Actual		Maximum		Violation?						
Entering freeway volume		pcph		pcph							
Exiting freeway volume		pcph		pcph							
On-ramp volume		pcph		pcph							
Off-ramp volume		pcph		pcph							
	LOS	and Perforr	nance Measures								
Flow rate, v _p				1,479	pcphpl						
Average passenger-car spee				64.9	mph						
Volume-to-capacity ratio, v/	c			0.63							
Density, D				22.8	pcpmpl						
Level of service, LOS				С							

HCM 2010: Freeway Basic Segment

Basic Operational Analysis

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-80 Mace Blvd to Olive Drive Existing PM Peak Hour										
Flow Inputs and Adjustments											
Volume, V Peak-hour factor, PHF			4,352 0.95	vph							
Peak 15-min volume, v ₁₅ Trucks and buses Recreational vehicles		1,145 8.8% 0.0%	veh								
Terrain type Grade			Level								
Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _F Heavy vehicle adjustment, f			1.5 1.2 0.958	mi							
Driver popoulation factor, f Flow rate, v _p Number of lanes, N			1.00 4,783 3	pcph							
	Speed Inputs a	and Adjustment	s								
Lane width Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Lateral clearance adjustmen TRD adjustment Calculated free-flow speed, Measured free-flow speed, Free-flow speed curve	FFS		12.0 >6 10.00 0.0 0.0 22.3 53.1	ft ft ramps/mi mph mph mph mph mph mph mph							
Tree now speed curve	Capacity Checks for	Segments with		iiipii							
Entering freeway volume Exiting freeway volume On-ramp volume Off-ramp volume	Actual pcph pcph pcph pcph	Maximum	pcph pcph pcph pcph	Violation?							
LOS and Performance Measures											
Flow rate, v _p Average passenger-car spee Volume-to-capacity ratio, v _p Density, D			1,594 64.5 0.68 24.7	pcphpl mph pcpmpl							
Level of service, LOS			С								

HCM 2010: Freeway Basic Segment

Basic Operational Analysis

Project Freeway Segment Alternative	Lincoln 40 EIR Westbound I-80 Olive Dr to Richa Existing					
Time period	PM Peak Hour					
	-1		1.0.15			
	FIC	ow inputs ar	nd Adjustments	i		
Volume, V				4,208	vph	
Peak-hour factor, PHF				0.95		
Peak 15-min volume, v ₁₅				1,107	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length				1 5	mi	
Trucks and buses PCE, E _T Recreational vehicle PCE, E _F				1.5 1.2		
Heavy vehicle adjustment, f	•			0.958		
Driver popoulation factor, f				1.00		
Flow rate, v_p	r			4,624	pcph	
Number of lanes, N				3	p op	
,						
	Spe	eed Inputs a	nd Adjustment	S		
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				10.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmen	nt, f _{LC}			0.0	mph	
TRD adjustment				22.3	mph	
Calculated free-flow speed,				53.1	mph	
Measured free-flow speed,	FFS				mph	
Free-flow speed curve				65	mph	
	Capacity	Checks for S	Segments with	Ramps		
Extended for	<u>Actual</u>		<u>Maximum</u>		<u>Violation?</u>	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume Off-ramp volume		pcph		pcph		
On-ramp volume		pcph		pcph		
	LOS	and Perforr	mance Measure	es		
Flow rate, v _p				1,541	pcphpl	
Average passenger-car spec	ed S			64.7	mph	
Volume-to-capacity ratio, v				0.66	ΠρΠ	
Density, D	, ~			23.8	pcpmpl	
Level of service, LOS				23.6 C	h-hiiihi	

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-80 Richards Blvd to O Existing PM Peak Hour	ld Davis Ro	b								
- Time period	TWIT CORTION					_					
Flow Inputs and Adjustments											
Volume, V				4,655	vph						
Peak-hour factor, PHF				0.95							
Peak 15-min volume, v ₁₅				1,225	veh						
Trucks and buses				8.8%							
Recreational vehicles				0.0%							
Terrain type				Level							
Grade					:						
Length Trucks and buses PCE, E_T				1.5	mi						
Recreational vehicle PCE, E_R				1.2							
Heavy vehicle adjustment, f				0.958							
Driver popoulation factor, f				1.00							
Flow rate, v _p				5,116	pcph						
Number of lanes, N				4							
	Spee	d Inputs a	nd Adjustments								
Lane width				12.0	ft						
Right-side lateral clearance				>6	ft						
Total ramp density, TRD				10.00	ramps/mi						
Lane width adjustment, f _{LW}				0.0	mph						
Lateral clearance adjustmer	nt, f _{LC}			0.0	mph						
TRD adjustment				22.3	mph						
Calculated free-flow speed,				53.1	mph						
Measured free-flow speed,	FFS				mph						
Free-flow speed curve				65	mph						
	Capacity C	hecks for S	Segments with Ra	mps							
	<u>Actual</u>		<u>Maximum</u>		Violation?	_					
Entering freeway volume	<u>rictual</u>	pcph	WIGAIIIGIII	pcph	*101dt10111						
Exiting freeway volume		pcph		pcph							
On-ramp volume		pcph		pcph							
Off-ramp volume		pcph		pcph							
	100 -										
	LOS a	na Pertorr	mance Measures		_	—					
Flow rate, v _p				1,279	pcphpl						
Average passenger-car spee				65.0	mph						
Volume-to-capacity ratio, v,	′c			0.54							
Density, D				19.7	pcpmpl						
Level of service, LOS				С							

Appendix B – Existing Plus Project

Vissim Post-Processor

Average Results from 10 Runs

Volume and Delay by Movement

Lincoln 40 EIR
Existing Plus Project Conditions
AM Peak Hour

Intersection 1 D St/First St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	12	11	92.5%	50.0	22.5	D
NB	Through	15	14	92.0%	47.3	19.3	D
IND	Right Turn	28	29	104.6%	6.8	3.4	Α
,	Subtotal	55	54	98.5%	24.8	7.0	С
	Left Turn	24	28	117.9%	51.8	14.5	D
SB	Through	20	22	109.5%	50.6	12.1	D
SD	Right Turn	15	16	104.0%	9.0	5.9	Α
	Subtotal	59	66	111.5%	40.7	10.7	D
	Left Turn	3	2	80.0%	47.1	47.8	D
EB	Through	264	277	105.0%	24.7	39.7	С
LD	Right Turn	31	29	93.2%	30.8	45.3	С
	Subtotal	298	309	103.6%	25.8	40.3	С
	Left Turn	31	32	103.2%	67.1	10.2	Е
WB	Through	438	442	100.8%	6.2	2.8	Α
VVD	Right Turn	50	48	96.4%	3.3	1.7	Α
	Subtotal	519	522	100.5%	10.6	4.3	В
	Total	931	950	102.1%	18.6	12.1	В

Intersection 2 E St-Richards Blvd/First St Signal

		Demand	Demand Served Volume (vph)		Total Delay (sec/veh)		h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	492	494	100.3%	28.9	5.6	С
NB	Through	87	89	102.0%	24.9	6.3	С
IND	Right Turn	236	224	95.0%	9.9	2.7	Α
	Subtotal	815	807	99.0%	23.2	4.8	С
	Left Turn	1	1	90.0%	0.6	2.0	Α
SB	Through	86	90	104.3%	47.8	9.3	D
36	Right Turn	10	9	93.0%	13.9	11.5	В
	Subtotal	97	100	103.0%	43.7	7.4	D
	Left Turn	9	8	86.7%	67.2	47.4	Ε
EB	Through	23	22	94.8%	88.6	22.2	F
LB	Right Turn	284	306	107.6%	11.2	3.2	В
	Subtotal	316	335	106.0%	18.2	3.0	В
	Left Turn	134	133	99.0%	63.0	8.0	E
WB	Through	17	17	102.4%	54.7	23.7	D
WB	Right Turn	3	3	103.3%	8.2	23.0	Α
	Subtotal	154	153	99.4%	61.9	8.6	Е
	Total	1,382	1,395	100.9%	27.5	3.5	С

I-80 WB Off-Ramp/Olive Dr

Side-street Stop

	Demand Served Volume (v		Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	2	1	50.0%	9.6	0.3	Α
NB	Through						
IND	Right Turn						
	Subtotal	2	1	50.0%	9.6	0.3	А
	Left Turn						
SB	Through						
36	Right Turn						
	Subtotal						
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn						
WB	Through	156	157	100.8%	0.5	0.1	Α
	Right Turn						
	Subtotal	156	157	100.8%	0.5	0.1	Α
	Total	158	158	100.2%	0.7	0.1	Α

Intersection 4

Richards Blvd/Olive Dr

Signal

		Demand	Served Vo	Served Volume (vph)		Delay (sec/vel	elay (sec/veh)	
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn	80	80	100.4%	104.2	9.8	F	
NB	Through	612	617	100.7%	36.8	6.1	D	
IND	Right Turn	36	35	96.4%	21.0	13.1	С	
_	Subtotal	728	732	100.5%	44.4	5.9	D	
	Left Turn	38	52	137.1%	41.1	6.6	D	
SB	Through	440	455	103.3%	10.4	2.7	В	
30	Right Turn	26	24	90.4%	8.3	6.9	Α	
	Subtotal	504	530	105.2%	13.5	2.3	В	
	Left Turn	37	35	94.9%	53.4	17.9	D	
EB	Through	8	8	100.0%	39.7	35.0	D	
LD	Right Turn	58	60	104.1%	28.2	19.8	С	
	Subtotal	103	104	100.5%	38.6	18.8	D	
	Left Turn	116	106	91.5%	44.4	9.4	D	
WB	Through	19	20	102.6%	70.4	19.6	Ε	
VVD	Right Turn	166	152	91.6%	59.8	12.6	Е	
	Subtotal	301	278	92.3%	54.4	8.4	D	
	Total	1,636	1,643	100.4%	36.2	3.2	D	

Richards Blvd/I-80 WB Ramps

Uncontrolled

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	405	409	100.9%	13.5	10.1	В
IND	Right Turn	359	359	99.9%	1.7	0.3	Α
	Subtotal	764	767	100.4%	8.1	5.6	Α
	Left Turn						_
SB	Through	427	432	101.2%	0.6	0.2	Α
36	Right Turn	198	201	101.5%	1.5	0.4	Α
	Subtotal	625	633	101.3%	0.9	0.2	Α
	Left Turn						
EB	Through						
LD	Right Turn	179	180	100.3%	0.8	0.1	Α
	Subtotal	179	180	100.3%	0.8	0.1	Α
	Left Turn						
WB	Through						
WD	Right Turn	389	389	100.1%	5.8	5.2	Α
	Subtotal	389	389	100.1%	5.8	5.2	Α
	Total	1,957	1,969	100.6%	4.7	3.1	Α

Intersection 6

Richards Blvd/I-80 EB Ramps

Signal

		Demand	Served Vo	Served Volume (vph)		Delay (sec/vel	ec/veh)	
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn							
NB	Through	578	585	101.2%	24.9	5.0	С	
IND	Right Turn	93	90	96.3%	14.1	3.2	В	
	Subtotal	671	675	100.6%	23.4	4.6	С	
•	Left Turn	242	243	100.4%	53.7	5.4	D	
SB	Through	364	369	101.4%	10.9	1.0	В	
36	Right Turn							
	Subtotal	606	612	101.0%	27.9	2.3	С	
	Left Turn							
EB	Through							
EB	Right Turn							
	Subtotal							
	Left Turn	429	433	101.0%	53.4	9.4	D	
WB	Through							
VVD	Right Turn	186	179	96.4%	21.8	8.2	С	
	Subtotal	615	612	99.6%	44.2	9.3	D	
	Total	1,892	1,899	100.4%	31.7	3.3	С	

Vissim Post-Processor

Average Results from 10 Runs

Volume and Delay by Movement

Lincoln 40 EIR
Existing Plus Project Conditions
AM Peak Hour

Intersection 7

Research Park Dr/Richards Blvd-Cowell Blvd

Signal

		Demand	Served Vo	Served Volume (vph)		Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	64	64	99.4%	52.8	6.8	D
NB	Through	6	6	96.7%	39.5	37.8	D
IND	Right Turn	30	30	101.3%	9.7	4.9	Α
	Subtotal	100	100	99.8%	38.9	5.4	D
	Left Turn	22	24	108.6%	49.9	12.4	D
SB	Through	19	19	100.5%	44.3	17.6	D
SD	Right Turn	84	81	96.2%	16.6	9.4	В
	Subtotal	125	124	99.0%	26.2	9.6	С
	Left Turn	189	189	99.8%	47.4	4.8	D
EB	Through	471	477	101.2%	25.4	5.5	С
ED	Right Turn	133	139	104.3%	22.5	5.2	С
	Subtotal	793	804	101.4%	29.9	4.9	С
	Left Turn	30	29	96.7%	56.6	13.6	E
WB	Through	488	490	100.5%	22.5	3.3	С
VVD	Right Turn	20	18	88.0%	8.7	5.4	Α
	Subtotal	538	537	99.8%	23.9	3.7	С
	Total	1,556	1,565	100.5%	28.1	4.1	С

Vissim Post-Processor

Average Results from 10 Runs

Volume and Delay by Movement

Lincoln 40 EIR
Existing Plus Project Conditions
PM Peak Hour

Intersection 1 D St/First St Signal

		Demand	Served Vo	Served Volume (vph)		Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
-	Left Turn	27	26	95.2%	24.4	10.0	С
NB	Through	41	43	104.9%	22.1	3.9	С
IND	Right Turn	61	62	100.8%	8.9	1.9	Α
	Subtotal	129	130	100.9%	16.5	3.0	В
	Left Turn	85	81	95.8%	38.9	23.0	D
SB	Through	29	30	102.1%	35.2	13.6	D
3D	Right Turn	21	23	107.1%	15.5	15.4	В
	Subtotal	135	134	98.9%	33.6	18.6	С
	Left Turn	14	13	92.1%	53.8	25.4	D
EB	Through	377	387	102.6%	55.0	38.0	D
LD	Right Turn	59	57	96.4%	48.6	33.6	D
	Subtotal	450	457	101.5%	54.6	37.2	D
	Left Turn	78	79	101.0%	31.8	2.8	С
WB	Through	310	308	99.2%	12.7	3.8	В
VV D	Right Turn	48	48	99.4%	9.8	4.8	Α
	Subtotal	436	434	99.6%	16.2	3.8	В
	Total	1,150	1,155	100.4%	33.9	15.3	С

Intersection 2 E St-Richards Blvd/First St Signal

		Demand	Served Vo	lume (vph)	Total Delay (sec/veh)			
Direction	Movement	Volume (vph)	Average	Average Percent		Std. Dev.	LOS	
	Left Turn	379	380	100.2%	18.7	10.1	В	
NB	Through	110	109	98.7%	19.6	10.6	В	
IND	Right Turn	256	250	97.5%	6.9	3.5	Α	
	Subtotal	745	738	99.1%	14.6	7.9	В	
	Left Turn	6	6	91.7%	38.8	32.3	D	
CD	Through	168	167	99.2%	57.0	14.3	Ε	
SB	Right Turn	21	22	102.9%	29.5	19.8	С	
	Subtotal	195	194	99.4%	53.6	15.2	D	
	Left Turn	10	10	101.0%	86.3	30.9	F	
EB	Through	53	54	102.3%	91.1	20.7	F	
LD	Right Turn	460	465	101.1%	17.0	2.2	В	
	Subtotal	523	529	101.2%	26.5	4.5	С	
	Left Turn	206	206	99.8%	90.0	34.5	F	
\A/R	Through	36	35	96.9%	43.5	13.3	D	
WB	Right Turn	6	7	113.3%	25.3	31.4	С	
	Subtotal	248	247	99.7%	82.4	30.6	F	
	Total	1,711	1,709	99.9%	33.7	7.0	С	

I-80 WB Off-Ramp/Olive Dr

Side-street Stop

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	7	8	112.9%	9.3	0.2	Α
NB	Through						
IND	Right Turn						
	Subtotal	7	8	112.9%	9.3	0.2	Α
	Left Turn						
SB	Through						
36	Right Turn						
	Subtotal						
	Left Turn						
EB	Through						
EB	Right Turn						
	Subtotal						
	Left Turn						
\ \ /D	Through	147	145	98.9%	0.5	0.0	Α
WB	Right Turn						
	Subtotal	147	145	98.9%	0.5	0.0	Α
	Total	154	153	99.5%	1.0	0.1	Α

Intersection 4

Richards Blvd/Olive Dr

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	46	44	95.9%	68.4	10.1	Е
NB	Through	536	535	99.8%	21.7	3.2	С
IND	Right Turn	60	53	88.3%	6.0	5.0	Α
_	Subtotal	642	632	98.4%	23.9	3.0	С
	Left Turn	102	104	102.0%	56.8	7.7	Е
CD	Through	698	699	100.1%	15.3	4.4	В
SB	Right Turn	34	34	99.7%	15.6	3.5	В
	Subtotal	834	837	100.3%	20.8	5.2	С
	Left Turn	32	33	101.6%	61.5	13.5	Е
EB	Through	7	5	77.1%	46.7	38.0	D
ED	Right Turn	74	73	98.2%	32.4	13.6	С
	Subtotal	113	111	97.9%	40.7	15.7	D
	Left Turn	156	143	91.9%	213.2	125.1	F
\A/D	Through	19	19	99.5%	203.1	122.9	F
WB	Right Turn	177	168	94.8%	187.1	129.4	F
	Subtotal	352	330	93.8%	199.9	123.9	F
	Total	1,941	1,909	98.4%	53.6	22.5	D

Richards Blvd/I-80 WB Ramps

Uncontrolled

		Demand	yph) Average Percent Average		Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	1.6 A 0.3 A 0.8 A 0.2 A 0.2 A 0.2 A 0.2 A 0.2 A 0.2 A	LOS
	Left Turn						
NB	Through	455	446	98.0%	5.6	1.6	Α
IND	Right Turn	437	429	98.1%	2.2	0.3	Α
	Subtotal	892	875	98.1%	4.0	0.8	А
	Left Turn						
CD	Through	644	629	97.7%	0.7	0.2	Α
SB	Right Turn	326	327	100.2%	1.8	0.2	Α
	Subtotal	970	956	98.5%	1.0	0.2	А
	Left Turn						
EB	Through						
LD	Right Turn	90	90	100.1%	0.8	0.2	Α
	Subtotal	90	90	100.1%	0.8	0.2	А
	Left Turn						
\A/B	Through						
WB	Right Turn	221	221	99.9%	0.9	0.2	Α
	Subtotal	221	221	99.9%	0.9	0.2	Α
	Total	2,173	2,141	98.5%	2.3	0.3	Α

Intersection 6

Richards Blvd/I-80 EB Ramps

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Volume (vph) Average		Average	Std. Dev.	LOS
	Left Turn						
NB	Through	711	711	100.0%	15.8	4.6	В
IND	Right Turn	126	128	101.2%	7.9	2.4	Α
	Subtotal	837	839	100.2%	14.5	4.1	В
	Left Turn	191	191	99.8%	63.2	4.9	Е
CD	Through	543	526	96.9%	10.2	1.7	В
SB	Right Turn						
	Subtotal	734	717	97.7%	24.5	2.3	С
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn	552	536	97.0%	163.0	21.3	F
WB	Through						
	Right Turn	181	163	90.1%	131.9	21.9	F
	Subtotal	733	699 95.3%		155.7	22.0	F
	Total	2,304	2,254	97.8%	62.7	7.2	Е

Vissim Post-Processor

Average Results from 10 Runs

Volume and Delay by Movement

Lincoln 40 EIR
Existing Plus Project Conditions
PM Peak Hour

Intersection 7

Research Park Dr/Richards Blvd-Cowell Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	92	94	101.6%	53.1	7.5	D
NB	Through	25	24	94.8%	33.2	17.1	С
IND	Right Turn	40	41	102.3%	15.1	6.6	В
	Subtotal	157	158	100.7%	40.9	6.3	D
	Left Turn	37	40	107.0%	42.7	14.4	D
CD	Through	10	8	84.0%	41.3	18.5	D
SB	Right Turn	129	126	97.8%	10.4	5.5	В
	Subtotal	176	174	99.0%	18.8	4.7	В
	Left Turn	307	303	98.7%	60.3	8.5	Е
EB	Through	729	705	96.7%	16.1	3.3	В
ED	Right Turn	59	56	95.4%	14.8	5.7	В
	Subtotal	1,095	1,064	97.2%	29.3	4.1	С
	Left Turn	25	25	100.0%	61.4	25.6	Е
\A/D	Through	532	533	100.2%	37.9	5.9	D
WB	Right Turn	35	35	100.3%	13.3	9.3	В
	Subtotal	592	593	100.2%	37.7	6.2	D
	Total	2,020	1,989	98.5%	31.8	2.9	С

Lincoln 40 EIR
Existing Plus Project Conditions
AM Peak Hour

Intersection 5 Richards Blvd/I-80 WB Ramps Uncontrolled

Divoction	Mayamant	Storage	A.,	_	Queue (ft)	N. A paris por uno	A.,		Queue (ft)	N. A parising a const	Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn	200			_			_			
	Through	200	1	0	1	1	59	4	56	69	NO
	Right Turn	1,120	1	0	1	1	59	4	56	69	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn										
35	Through	1,280	0	0	0	0	110	15	83	141	NO
	Right Turn	1,800	0	0	0	0	24	8	19	48	NO
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
EB	Through										
	Right Turn	560	0	0	0	0	25	14	0	49	NO
	Second Right										
	U Turn										
WB	Second Left										
	Left Turn										
	Through										
	Right Turn	1,500	0	0	0	0	0	0	0	0	NO
	Second Right	, , , , , , , , , , , , , , , , , , ,									

Lincoln 40 EIR
Existing Plus Project Conditions
AM Peak Hour

Intersection 6 Richards Blvd/I-80 EB Ramps Signal

		Storage		_	Queue (ft)				Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
	Through	500	50	6	41	60	320	30	270	360	NO
	Right Turn	500	36	6	27	45	291	30	240	331	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn	360	46	3	41	51	182	31	156	258	NO
36	Through	1,300	14	2	10	16	153	29	91	185	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
EB	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
	Left Turn	160	159	21	124	185	725	107	555	882	MAX
	Through										
	Right Turn	1,260	8	1	6	10	124	29	89	186	NO
	Second Right										

Lincoln 40 EIR
Existing Plus Project Conditions
PM Peak Hour

Intersection 5 Richards Blvd/I-80 WB Ramps Uncontrolled

	1	Storage		Average	Queue (ft)			Maximum	Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
ND	Through	200	2	1	1	3	61	3	57	65	NO
	Right Turn	1,120	2	1	1	3	61	3	57	65	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn										
36	Through	1,280	1	0	0	1	127	29	99	204	NO
	Right Turn	1,800	0	0	0	0	0	0	0	0	NO
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
LD	Through										
	Right Turn	560	0	0	0	0	2	7	0	21	NO
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn										
VVD	Through										
	Right Turn	1,500	0	0	0	0	0	0	0	0	NO
	Second Right										

Lincoln 40 EIR
Existing Plus Project Conditions
PM Peak Hour

Intersection 6 Richards Blvd/I-80 EB Ramps Signal

		Storage		_	Queue (ft)				Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
ND	Through	500	37	6	30	49	360	41	314	450	NO
	Right Turn	500	26	5	20	37	330	41	285	420	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn	360	44	3	39	48	149	17	122	181	NO
36	Through	1,300	18	1	16	19	198	27	158	251	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
ED	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
	Left Turn	160	782	163	411	993	1,284	58	1,123	1,319	AVG
VVD	Through										
	Right Turn	1,260	13	8	7	31	288	354	98	1,151	NO
	Second Right										

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Old Davis Rd to Richards Bl Existing Plus Project AM Peak Hour	vd							
Flow Inputs and Adjustments									
Volume, V		4,325	vph						
Peak-hour factor, PHF		0.92							
Peak 15-min volume, v_{15}		1,175	veh						
Trucks and buses		8.8%							
Recreational vehicles		0.0%							
Terrain type		Level							
Grade									
Length		4.5	mi						
Trucks and buses PCE, E _T		1.5 1.2							
Recreational vehicle PCE, E _R Heavy vehicle adjustment, f		0.958							
Driver popoulation factor, $f_{\rm F}$		1.00							
Flow rate, v_p	,	4,908	pcph						
Number of lanes, N		3							
	Speed Inputs a	and Adjustments							
Lane width		12.0	ft						
Right-side lateral clearance		>6	ft						
Total ramp density, TRD		7.00	ramps/mi						
Lane width adjustment, f_{LW}		0.0	mph						
Lateral clearance adjustmen	t, f _{LC}	0.0	mph						
TRD adjustment		16.5	mph						
Calculated free-flow speed,		58.9	mph						
Measured free-flow speed, I	FFS		mph						
Free-flow speed curve		65	mph						
	Capacity Checks for	Segments with Ramps							
			Violetie - 2						
Entering freeway volume	<u>Actual</u> pcph	<u>Maximum</u> pcph	<u>Violation?</u>						
Exiting freeway volume	рсрп	рсрп							
On-ramp volume	pcph	pcph							
Off-ramp volume	pcph	pcph							
	LOS and Perfor	mance Measures							
Flow rate, v _p		1,636	pcphpl						
Average passenger-car spee	d, S	64.2	mph						
Volume-to-capacity ratio, v/	'c	0.70							
Density, D		25.5	pcpmpl						
Level of service, LOS		С							

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Richards Blvd t Existing Plus Pi AM Peak Hour	to Mace Blvd roject							
Flow Inputs and Adjustments									
Volume, V				4,045	vph				
Peak-hour factor, PHF				0.92					
Peak 15-min volume, v ₁₅				1,099	veh				
Trucks and buses				8.8%					
Recreational vehicles				0.0%					
Terrain type				Level					
Grade									
Length					mi				
Trucks and buses PCE, E _T				1.5					
Recreational vehicle PCE, E	n			1.2					
Heavy vehicle adjustment,	••			0.958					
Driver popoulation factor,				1.00					
Flow rate, v_p	P			4,590	pcph				
Number of lanes, N				3	рерп				
Number of lanes, iv				3					
	S	peed Inputs a	nd Adjustments						
المالية				12.0	£.				
Lane width				12.0	ft				
Right-side lateral clearance				>6	ft , .				
Total ramp density, TRD				7.00	ramps/mi				
Lane width adjustment, f _{LW}				0.0	mph				
Lateral clearance adjustme	nt, t _{LC}			0.0	mph				
TRD adjustment				16.5	mph				
Calculated free-flow speed				58.9	mph				
Measured free-flow speed,	FFS				mph				
Free-flow speed curve				65	mph				
	Canaci	ty Checks for 9	Segments with R	amns					
	Cupaci	c, checks for c	COMMENTS WITH I						
	<u>Actual</u>		<u>Maximum</u>		Violation?				
Entering freeway volume		pcph		pcph					
Exiting freeway volume		pcph		pcph					
On-ramp volume		pcph		pcph					
Off-ramp volume		pcph		pcph					
	1.0	ns and Dorfor	mance Measures	_					
-	LC	Janu Periori	iiaiice ivieasures)					
Flow rate, v _p				1,530	pcphpl				
Average passenger-car spe	ed, S			64.8	mph				
Volume-to-capacity ratio, v				0.65					
Density, D				23.6	pcpmpl				
Level of service, LOS				С					
•									

HCM 2010: Freeway Basic Segment

Basic Operational Analysis

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-80 Mace Blvd to Olive Drive Existing Plus Project AM Peak Hour				
	Flow Inputs a	nd Adjustments			
Volume, V Peak-hour factor, PHF			4,885 0.96	vph	
Peak 15-min volume, v ₁₅ Trucks and buses Recreational vehicles	1,272 8.8% 0.0%	veh			
Terrain type Grade Length Trucks and buses PCE, E _T			Level	mi	
Recreational vehicle PCE, E_R Heavy vehicle adjustment, f_R Driver popoulation factor, f_R	HV		1.3 1.2 0.958 1.00		
Flow rate, v _p Number of lanes, N	,		5,312	pcph	
	Speed Inputs a	and Adjustments			
Lane width Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Lateral clearance adjustmen TRD adjustment Calculated free-flow speed, Measured free-flow speed, Free-flow speed curve	FFS		12.0 >6 10.00 0.0 0.0 22.3 53.1	ft ft ramps/mi mph mph mph mph mph mph mph mph	
	Capacity Checks for	Segments with R	lamps		
Entering freeway volume Exiting freeway volume On-ramp volume Off-ramp volume	Actual pcph pcph pcph pcph	<u>Maximum</u>	pcph pcph pcph pcph	Violation?	
	LOS and Perfor	mance Measures	s		
Flow rate, v _p Average passenger-car spee Volume-to-capacity ratio, v/ Density, D Level of service, LOS			1,771 63.1 0.75 28.1 D	pcphpl mph pcpmpl	

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-80 Olive Dr to Rich Existing Plus Pro AM Peak Hour	ards Blvd							
Flow Inputs and Adjustments									
Volume, V				4,729	vph				
Peak-hour factor, PHF				0.96					
Peak 15-min volume, v ₁₅				1,232	veh				
Trucks and buses				8.8%					
Recreational vehicles				0.0%					
Terrain type				Level					
Grade									
Length					mi				
Trucks and buses PCE, E_T				1.5					
Recreational vehicle PCE, E _R				1.2					
Heavy vehicle adjustment, f				0.958					
Driver popoulation factor, f	•			1.00					
Flow rate, v _p				5,143	pcph				
Number of lanes, N				3					
	Sp	eed Inputs a	nd Adjustment	S					
Lane width				12.0	ft				
Right-side lateral clearance				>6	ft				
Total ramp density, TRD				10.00	ramps/mi				
Lane width adjustment, f _{LW}				0.0	mph				
Lateral clearance adjustmer	it, f _{LC}			0.0	mph				
TRD adjustment				22.3	mph				
Calculated free-flow speed,				53.1	mph				
Measured free-flow speed,	FFS				mph				
Free-flow speed curve				65	mph				
	Capacity	/ Checks for S	Segments with	Ramps					
				-					
	<u>Actual</u>		<u>Maximum</u>		Violation?				
Entering freeway volume		pcph		pcph					
Exiting freeway volume		pcph		pcph					
On-ramp volume		pcph		pcph					
Off-ramp volume		pcph		pcph					
	LO	S and Perforr	mance Measure	es					
Flow rate, v _p				1,714	pcphpl				
Average passenger-car spee				63.6	mph				
Volume-to-capacity ratio, v	'C			0.73					
Density, D				27.0	pcpmpl				
Level of service, LOS				D					

Project Freeway Segment Alternative	Lincoln 40 EIR Westbound I-8 Richards Blvd 1 Existing Plus P	to Old Davis Ro	d			
Time period	AM Peak Hour	-				
		Flow Innuts ar	nd Adjustments			
		now inputs ai	ia Aujustinents			
Volume, V				4,718	vph	
Peak-hour factor, PHF				0.96		
Peak 15-min volume, v ₁₅				1,229	veh	
Trucks and buses Recreational vehicles				8.8% 0.0%		
Terrain type				Level		
Grade				Level		
Length					mi	
Trucks and buses PCE, E _T				1.5		
Recreational vehicle PCE, E _R				1.2		
Heavy vehicle adjustment, f	HV			0.958		
Driver popoulation factor, f	•			1.00		
Flow rate, v _p				5,131	pcph	
Number of lanes, N				4		
	9	Speed Inputs a	nd Adjustments			
					6	
Lane width				12.0	ft ft	
Right-side lateral clearance Total ramp density, TRD				>6 10.00		
Lane width adjustment, f _{LW}				0.0	ramps/mi mph	
Lateral clearance adjustmen	t. f.c			0.0	mph	
TRD adjustment	, IC			22.3	mph	
Calculated free-flow speed,	FFS			53.1	mph	
Measured free-flow speed, I					mph	
Free-flow speed curve				65	mph	
	Capaci	ty Checks for S	Segments with Ra	imps		
	<u>Actual</u>		<u>Maximum</u>		Violation?	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
	Lo	OS and Perforr	nance Measures			
Flow rate v				1,283	pcphpl	_
Flow rate, v _p Average passenger-car spee	d			65.0	mph	
Volume-to-capacity ratio, v/				0.55	Пірп	
Density, D				19.7	pcpmpl	
Level of service, LOS				C C	poppi	
,						

Project Freeway Segment	Lincoln 40 EIR Eastbound I-80 Old Davis Rd to Rich					
Alternative Time period	Existing Plus Project PM Peak Hour					
	Flow	nputs and A	Adjustments			
Volume, V				4,329	vph	
Peak-hour factor, PHF				0.92	_	
Peak 15-min volume, v ₁₅				1,176	veh	
Trucks and buses				8.8% 0.0%		
	Recreational vehicles					
Terrain type Grade				Level		
Length					mi	
Trucks and buses PCE, E _T				1.5	1111	
Recreational vehicle PCE, E _R				1.2		
Heavy vehicle adjustment, f				0.958		
Driver popoulation factor, f				1.00		
Flow rate, v _p				4,912	pcph	
Number of lanes, N				3		
	Speed	Inputs and	Adjustments			
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				7.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmer	it, f _{LC}			0.0	mph	
TRD adjustment				16.5	mph	
Calculated free-flow speed,	FFS			58.9	mph	
Measured free-flow speed,	FFS				mph	
Free-flow speed curve				65	mph	
	Canacity Che	acks for Sea	ments with Ran	nne		
	Capacity City	cas for seg	mento with Nat	1143		
	<u>Actual</u>	_ <u>_</u>	<u>Maximum</u>		Violation?	
Entering freeway volume		cph		pcph		
Exiting freeway volume		cph		pcph		
On-ramp volume		cph		pcph		
Off-ramp volume	F	cph		pcph		
	LOS an	d Performai	nce Measures			
Flow rate, v _p				1,637	pcphpl	
Average passenger-car spee	d. S			64.2	mph	
Volume-to-capacity ratio, v				0.70	6.,	
Density, D				25.5	pcpmpl	
Level of service, LOS				С		

		101101711017515							
Project	Lincoln 40 EIR								
Freeway	Eastbound I-80								
Segment	Richards Blvd to Mace Blvd								
Alternative	Existing Plus Project								
Time period	PM Peak Hour								
Flow Inputs and Adjustments									
			2.042						
Volume, V			3,913	vph					
Peak-hour factor, PHF			0.92						
Peak 15-min volume, v ₁₅			1,063	veh					
Trucks and buses			8.8%						
Recreational vehicles			0.0%						
Terrain type			Level						
Grade									
Length				mi					
Trucks and buses PCE, E_T			1.5						
Recreational vehicle PCE, E	₹		1.2						
Heavy vehicle adjustment,	r HV		0.958						
Driver popoulation factor, f	P		1.00						
Flow rate, v _p			4,440	pcph					
Number of lanes, N			3						
	Speed Inputs a	nd Adjustments							
Lane width			12.0	ft					
Right-side lateral clearance			>6	ft					
Total ramp density, TRD			7.00	ramps/mi					
Lane width adjustment, f _{LW}			0.0	mph					
Lateral clearance adjustmen	nt. f.c		0.0	mph					
TRD adjustment	, .[[16.5	mph					
Calculated free-flow speed,	FFS		58.9	mph					
Measured free-flow speed,			30.3	mph					
Free-flow speed curve	113		65						
riee-now speed curve			05	mph					
	Capacity Checks for S	Segments with F	Ramps						
	<u>Actual</u>	<u>Maximum</u>		Violation?					
Entering freeway volume	pcph		pcph						
Exiting freeway volume	pcph		pcph						
On-ramp volume	pcph		pcph						
Off-ramp volume	pcph		pcph						
On-ramp volume	рсрп		рсрп						
	LOS and Perforr	mance Measure	S						
Flow rate, v _p			1,480	pcphpl					
Average passenger-car spec	ed. S		64.9	mph					
Volume-to-capacity ratio, v			0.63	6,,,					
Density, D	, •		22.8	pcpmpl					
Level of service, LOS			22.8 C	рериири					
Level of service, LOS			C						

Duningt	Lincoln 40 FID								
Project Freeway	Lincoln 40 EIR Westbound I-80								
Segment	Mace Blvd to Olive Di	rivo							
Alternative	Existing Plus Project	iivc							
Time period	-								
	TWT Cak Hour								
	Flow Inputs and Adjustments								
Volume, V				4,355	vph				
Peak-hour factor, PHF				0.95	r				
Peak 15-min volume, v ₁₅				1,146	veh				
Trucks and buses				8.8%					
Recreational vehicles				0.0%					
Terrain type				Level					
Grade				2000.					
Length					mi				
Trucks and buses PCE, E _T				1.5					
Recreational vehicle PCE, E				1.2					
Heavy vehicle adjustment, f				0.958					
Driver popoulation factor, f				1.00					
Flow rate, v_{D}	P			4,786	pcph				
Number of lanes, N				3	рерп				
Number of lanes, N				3					
	Speed I	nputs ar	nd Adjustment	S					
Lane width				12.0	ft				
Right-side lateral clearance				>6	ft				
Total ramp density, TRD				10.00	ramps/mi				
Lane width adjustment, f _{LW}				0.0	mph				
Lateral clearance adjustmen	nt, f _{ic}			0.0	mph				
TRD adjustment	, 10			22.3	mph				
Calculated free-flow speed,	FFS			53.1	mph				
Measured free-flow speed,					mph				
Free-flow speed curve				65	mph				
					·				
	Capacity Chec	cks for S	egments with	Ramps					
	<u>Actual</u>		<u>Maximum</u>		Violation?				
Entering freeway volume	рс	ph		pcph					
Exiting freeway volume		ph		pcph					
On-ramp volume		ph		pcph					
Off-ramp volume	рс	ph		pcph					
	1.00	D (
	LOS and	Perforn	nance Measure	25					
Flow rate, v _p				1,595	pcphpl				
Average passenger-car spec	ed, S			64.5	mph				
Volume-to-capacity ratio, v	/c			0.68					
Density, D				24.7	pcpmpl				
Level of service, LOS				С					

Project	Lincoln 40 EIR								
Freeway	Westbound I-80 Olive Dr to Richards Blvd								
Segment Alternative	Existing Plus Project								
Time period	PM Peak Hour								
	FIVI FEAK HOUI								
Flow Inputs and Adjustments									
Volume, V		4,208	vph						
Peak-hour factor, PHF		0.95	Τ.						
Peak 15-min volume, v ₁₅		1,107	veh						
Trucks and buses		8.8%							
Recreational vehicles		0.0%							
Terrain type		Level							
Grade									
Length			mi						
Trucks and buses PCE, E_T		1.5							
Recreational vehicle PCE, E	₹	1.2							
Heavy vehicle adjustment, f	: HV	0.958							
Driver popoulation factor, f	P	1.00							
Flow rate, v _p		4,624	pcph						
Number of lanes, N		3							
	Speed Inputs	and Adjustments							
Lane width		12.0	ft						
Right-side lateral clearance		>6	ft						
Total ramp density, TRD		10.00	ramps/mi						
Lane width adjustment, f _{LW}		0.0	mph						
Lateral clearance adjustmen	nt, f _{LC}	0.0	mph						
TRD adjustment		22.3	mph						
Calculated free-flow speed,		53.1	mph						
Measured free-flow speed,	FFS		mph						
Free-flow speed curve		65	mph						
	Capacity Checks for	Segments with Ramps							
	<u>Actual</u>	<u>Maximum</u>	Violation?						
Entering freeway volume	pcph	pcph	_						
Exiting freeway volume	pcph	pcph							
On-ramp volume	pcph	pcph							
Off-ramp volume	pcph	pcph							
	LOS and Perfo	mance Measures							
	LOS and i error								
Flow rate, v _p		1,541	pcphpl						
Average passenger-car spee		64.7	mph						
Volume-to-capacity ratio, v	/c	0.66							
Density, D		23.8	pcpmpl						
Level of service, LOS		С							

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-80 Richards Blvd to Existing Plus Pro PM Peak Hour	Old Davis R	d						
Flow Inputs and Adjustments									
Volume, V				4,660	vph				
Peak-hour factor, PHF				0.95					
Peak 15-min volume, v ₁₅				1,226	veh				
Trucks and buses				8.8%					
Recreational vehicles				0.0%					
Terrain type				Level					
Grade									
Length					mi				
Trucks and buses PCE, E _T				1.5					
Recreational vehicle PCE, E	,			1.2					
Heavy vehicle adjustment, f	•			0.958					
Driver popoulation factor, f				1.00					
Flow rate, v _p	r			5,121	pcph				
Number of lanes, N				4	p op				
realiser of lanes, re				-					
	Spe	eed Inputs a	nd Adjustments						
Lana and Alah				42.0	6.				
Lane width				12.0	ft				
Right-side lateral clearance				>6	ft , .				
Total ramp density, TRD				10.00	ramps/mi				
Lane width adjustment, f _{LW}				0.0	mph				
Lateral clearance adjustmen	nt, f _{LC}			0.0	mph				
TRD adjustment				22.3	mph				
Calculated free-flow speed,				53.1	mph				
Measured free-flow speed,	FFS				mph				
Free-flow speed curve				65	mph				
	Canacity	Chacks for	Segments with R	amns					
	Capacity	CHECKS IOI	Jeginenia witii N	ипрэ					
	<u>Actual</u>		<u>Maximum</u>		Violation?				
Entering freeway volume		pcph		pcph					
Exiting freeway volume		pcph		pcph					
On-ramp volume		pcph		pcph					
Off-ramp volume		pcph		pcph					
	1.00								
	LOS	and Perfor	mance Measures	·					
Flow rate, v _p				1,280	pcphpl				
Average passenger-car spec	ed, S			65.0	mph				
Volume-to-capacity ratio, v				0.54	ľ				
Density, D	•			19.7	pcpmpl				
Level of service, LOS				C	llle-				
				-					

Appendix C – Cumulative No Project

Vissim Post-Processor

Average Results from 10 Runs

Volume and Delay by Movement

Lincoln 40 EIR Cumulative No Project AM Peak Hour

Intersection 1 D St/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
-	Left Turn	12	10	86.7%	45.1	19.1	D
NB	Through	17	14	80.6%	46.0	25.6	D
IND	Right Turn	28	28	100.0%	5.9	0.6	Α
	Subtotal	57	52	91.4%	22.4	5.9	С
	Left Turn	57	58	101.1%	45.8	12.1	D
SB	Through	32	30	94.4%	45.8	15.5	D
3D	Right Turn	56	54	95.9%	11.9	3.3	В
	Subtotal	145	142	97.6%	32.0	7.3	С
	Left Turn	2	1	60.0%	10.9	24.9	В
EB	Through	338	335	99.1%	18.5	8.0	В
LD	Right Turn	31	30	95.8%	17.0	12.1	В
	Subtotal	371	366	98.6%	18.5	8.2	В
	Left Turn	30	27	90.0%	69.3	14.9	Ε
WB	Through	481	407	84.7%	7.8	2.3	Α
	Right Turn	51	46	90.0%	6.1	3.0	Α
	Subtotal	562	480	85.4%	11.3	2.9	В
	Total	1,135	1,040	91.6%	17.3	2.9	В

Intersection 2 E St-Richards Blvd/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	493	419	85.0%	44.3	10.7	D
NB	Through	157	139	88.6%	42.9	10.4	D
IND	Right Turn	264	216	81.8%	18.8	5.2	В
	Subtotal	914	774	84.7%	37.3	8.9	D
	Left Turn	1	1	80.0%	9.1	20.1	А
SB	Through	170	163	96.1%	35.2	3.7	D
36	Right Turn	10	12	116.0%	8.3	7.0	Α
	Subtotal	181	176	97.1%	33.6	3.8	С
	Left Turn	9	8	87.8%	56.7	41.2	E
EB	Through	34	34	100.6%	53.9	10.1	D
ED	Right Turn	381	381	99.9%	16.5	4.4	В
	Subtotal	424	423	99.7%	20.1	4.4	С
	Left Turn	133	130	97.6%	44.7	4.7	D
\ \ /D	Through	57	54	94.4%	37.6	10.9	D
WB	Right Turn	3	3	83.3%	2.1	3.7	Α
	Subtotal	193	186	96.4%	42.3	4.6	D
	Total	1,712	1,559	91.0%	32.7	4.5	С

Intersection 3

Olive Dr/Olive Dr Off-Ramp

Side-street Stop

		Demand	Served Vo	lume (vph)	Total Delay (sec/veh)		h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through						
IND	Right Turn						
	Subtotal						
	Left Turn						
SB	Through						
36	Right Turn						
	Subtotal						
	Left Turn						
EB	Through						
EB	Right Turn						
	Subtotal						
	Left Turn						
WB	Through	159	156	98.2%	0.5	0.0	Α
	Right Turn						
	Subtotal	159	156	98.2%	0.5	0.0	А
	Total	159	156	98.2%	0.5	0.0	А

Intersection 4

Olive Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn	216	172	79.5%	77.1	8.7	E	
NB	Through	682	558	81.9%	198.9	42.4	F	
IND	Right Turn	42	34	80.5%	88.4	20.9	F	
_	Subtotal	940	764	81.3%	166.1	31.2	F	
	Left Turn	57	51	90.2%	28.4	6.0	С	
SB	Through	514	513	99.7%	22.5	3.6	С	
30	Right Turn	112	109	97.5%	17.8	4.0	В	
	Subtotal	683	673	98.6%	22.2	3.6	С	
	Left Turn	64	59	91.9%	35.4	12.2	D	
EB	Through	10	10	100.0%	21.1	18.3	С	
LD	Right Turn	84	82	97.6%	18.6	8.5	В	
	Subtotal	158	151	95.4%	25.9	10.8	С	
	Left Turn	114	108	94.3%	28.5	4.5	С	
WB	Through	24	24	100.4%	38.3	13.8	D	
	Right Turn	168	155	92.3%	36.4	7.9	D	
	Subtotal	306	287	93.7%	34.0	5.1	С	
	Total	2,087	1,874	89.8%	83.7	11.7	F	

Intersection 5 I-80 WB Ramps/Richards Blvd

Uncontrolled

		Demand	Served Vo	lume (vph)	Total	n)	
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	465	380	81.7%	205.8	26.0	F
	Right Turn	615	534	86.8%	1.9	0.4	Α
	Subtotal	1,080	914	84.6%	88.4	12.8	F
	Left Turn						
SB	Through	517	501	96.8%	0.8	0.1	Α
36	Right Turn	198	197	99.6%	1.3	0.4	Α
	Subtotal	715	698	97.6%	1.0	0.1	Α
	Left Turn						
EB	Through						
LB	Right Turn	212	204	96.0%	0.9	0.2	Α
	Subtotal	212	204	96.0%	0.9	0.2	Α
	Left Turn						
WB	Through						
	Right Turn	479	397	82.8%	506.9	102.9	F
	Subtotal	479	397	82.8%	506.9	102.9	F
	Total	2,486	2,212	89.0%	125.2	16.1	F

Intersection 6

I-80 EB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	848	753	88.8%	159.2	24.4	F
IND	Right Turn	93	84	89.8%	141.9	34.8	F
	Subtotal	941	836	88.9%	157.4	23.8	F
	Left Turn	249	242	97.1%	29.4	2.9	С
SB	Through	480	463	96.4%	11.4	1.3	В
36	Right Turn						
	Subtotal	729	705	96.6%	17.4	1.5	В
	Left Turn						
EB	Through						
LD	Right Turn						
	Subtotal						
	Left Turn	724	632	87.2%	264.3	146.7	F
WB	Through						
	Right Turn	232	198	85.1%	366.4	164.9	F
	Subtotal	956	829	86.7%	289.0	151.1	F
	Total	2,626	2,370	90.2%	155.5	50.9	F

Vissim Post-Processor

Average Results from 10 Runs

Volume and Delay by Movement

Lincoln 40 EIR Cumulative No Project AM Peak Hour

Intersection 7

Research Park Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	72	69	95.3%	81.7	38.2	F
NB	Through	6	6	96.7%	30.9	22.0	С
IND	Right Turn	38	36	95.5%	5.7	1.4	Α
	Subtotal	116	111	95.4%	56.3	29.5	Е
	Left Turn	33	33	100.0%	142.3	103.3	F
SB	Through	27	24	89.3%	156.9	153.5	F
30	Right Turn	137	119	86.9%	191.8	125.7	F
	Subtotal	197	176	89.4%	175.9	118.8	F
	Left Turn	335	304	90.7%	53.8	12.5	D
EB	Through	726	654	90.1%	0.4	0.1	Α
LD	Right Turn	143	134	93.4%	5.6	1.5	Α
	Subtotal	1,204	1,092	90.7%	15.7	4.2	В
	Left Turn	36	33	92.8%	126.9	44.2	F
WB	Through	698	643	92.1%	136.9	56.8	F
	Right Turn	68	60	88.5%	90.2	48.4	F
	Subtotal	802	737	91.9%	132.4	55.6	F
	Total	2,319	2,115	91.2%	69.2	25.2	Е

Vissim Post-Processor

Average Results from 10 Runs

Volume and Delay by Movement

Lincoln 40 EIR Cumulative No Project PM Peak Hour

Intersection 1 D St/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	31	28	89.0%	20.1	5.7	С
	Through	40	40	100.5%	18.7	6.4	В
IND	Right Turn	63	64	101.3%	19.7	3.6	В
	Subtotal	134	132	98.2%	19.9	1.5	В
	Left Turn	151	142	93.8%	175.6	69.9	F
SB	Through	35	36	102.6%	167.1	65.1	F
3D	Right Turn	39	40	103.3%	126.5	78.3	F
	Subtotal	225	218	96.8%	166.1	71.6	F
	Left Turn	15	8	56.0%	312.8	136.6	F
EB	Through	455	288	63.3%	330.4	56.8	F
ED	Right Turn	59	34	56.8%	336.3	73.2	F
	Subtotal	529	330	62.4%	331.1	58.2	F
	Left Turn	77	70	91.3%	36.0	4.6	D
WB	Through	379	373	98.4%	17.4	3.4	В
	Right Turn	49	45	92.4%	13.2	4.5	В
	Subtotal	505	489	96.7%	19.5	2.9	В
	Total	1,393	1,168	83.8%	133.1	11.4	F

Intersection 2 E St-Richards Blvd/1st St Signal

		Demand	Served Vo	lume (vph)) Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	381	370	97.1%	39.0	8.8	D
NB	Through	184	172	93.4%	39.6	10.7	D
IND	Right Turn	308	277	89.8%	15.3	6.2	В
	Subtotal	873	818	93.7%	31.5	8.0	С
	Left Turn	7	6	81.4%	44.2	38.0	D
SB	Through	197	196	99.3%	80.1	22.8	F
36	Right Turn	23	23	100.9%	39.2	20.7	D
	Subtotal	227	225	98.9%	75.2	23.8	Е
	Left Turn	10	9	91.0%	96.1	43.5	F
EB	Through	63	54	85.9%	87.9	13.6	F
ED	Right Turn	597	435	72.8%	49.5	7.6	D
	Subtotal	670	498	74.3%	54.1	8.3	D
	Left Turn	219	212	96.9%	144.6	64.5	F
WB	Through	102	101	98.7%	39.6	4.4	D
	Right Turn	6	8	126.7%	21.4	22.0	С
	Subtotal	327	321	98.0%	110.2	45.7	F
	Total	2,097	1,861	88.8%	55.7	12.2	E

Intersection 3

Olive Dr/Olive Dr Off-Ramp

Side-street Stop

		Demand	Served Vo	lume (vph)	Total Delay (sec/veh)		h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
ND	Through						
NB	Right Turn						
	Subtotal						
	Left Turn						
SB	Through						
36	Right Turn						
	Subtotal						
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn						
WB	Through	158	162	102.6%	0.5	0.1	Α
	Right Turn						
	Subtotal	158	162	102.6%	0.5	0.1	А
	Total	158	162	102.6%	0.5	0.1	А

Intersection 4

Olive Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn	133	110	82.8%	91.7	11.8	F	
NB	Through	547	499	91.2%	116.6	46.0	F	
IND	Right Turn	64	51	79.8%	70.1	36.4	Е	
	Subtotal	744	660	88.8%	108.7	37.4	F	
	Left Turn	102	95	93.1%	67.0	3.8	E	
SB	Through	825	673	81.5%	59.1	3.1	Ε	
36	Right Turn	85	75	88.4%	54.7	3.7	D	
	Subtotal	1,012	843	83.3%	59.7	2.6	Е	
	Left Turn	137	137	100.3%	30.3	6.1	С	
EB	Through	16	16	101.3%	25.9	7.0	С	
LB	Right Turn	138	134	97.0%	23.1	5.1	С	
	Subtotal	291	287	98.8%	26.9	4.9	С	
	Left Turn	149	152	102.2%	35.6	7.2	D	
WB	Through	22	24	109.5%	40.1	12.2	D	
	Right Turn	189	180	95.4%	36.3	10.6	D	
	Subtotal	360	357	99.1%	36.6	8.5	D	
	Total	2,407	2,147	89.2%	66.3	11.4	E	

Intersection 5 I-80 WB Ramps/Richards Blvd

Uncontrolled

		Demand	Served Vo	lume (vph)	Total	Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn							
NB	Through	521	454	87.1%	142.9	29.4	F	
	Right Turn	771	725	94.0%	2.3	0.6	Α	
	Subtotal	1,292	1,179	91.3%	58.3	13.8	F	
	Left Turn							
SB	Through	817	688	84.2%	0.8	0.2	Α	
ЭD	Right Turn	349	325	93.2%	2.0	0.3	Α	
	Subtotal	1,166	1,014	86.9%	1.2	0.2	Α	
	Left Turn							
EB	Through							
LD	Right Turn	116	114	98.1%	0.7	0.1	Α	
	Subtotal	116	114	98.1%	0.7	0.1	Α	
	Left Turn							
WB	Through							
	Right Turn	229	227	99.3%	32.9	27.9	D	
	Subtotal	229	227	99.3%	32.9	27.9	D	
	Total	2,803	2,534	90.4%	29.6	3.8	D	

Intersection 6

I-80 EB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
ND	Through	1,096	1,041	95.0%	77.0	23.6	Е
NB	Right Turn	128	116	90.9%	122.8	49.8	F
	Subtotal	1,224	1,157	94.6%	81.8	24.5	F
	Left Turn	294	224	76.3%	52.9	5.9	D
SB	Through	639	577	90.3%	27.2	6.7	С
SD	Right Turn						
,	Subtotal	933	801	85.9%	34.1	5.7	С
	Left Turn						
EB	Through						
ED	Right Turn						
	Subtotal						
	Left Turn	821	682	83.0%	269.5	162.0	F
WB	Through						
	Right Turn	196	164	83.5%	229.0	107.4	F
	Subtotal	1,017	845	83.1%	263.7	155.1	F
	Total	3,174	2,804	88.3%	110.4	25.6	F

Vissim Post-Processor

Average Results from 10 Runs

Volume and Delay by Movement

Lincoln 40 EIR Cumulative No Project PM Peak Hour

Intersection 7

Research Park Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn	92	87	94.9%	69.7	12.4	E	
NB	Through	24	23	97.1%	35.6	10.7	D	
	Right Turn	66	68	103.0%	10.1	5.1	В	
	Subtotal	182	179	98.1%	43.2	7.5	D	
	Left Turn	40	39	96.3%	147.4	70.8	F	
SB	Through	15	14	90.0%	131.8	79.5	F	
SD	Right Turn	399	369	92.4%	123.7	83.7	F	
	Subtotal	454	421	92.7%	127.3	81.2	F	
	Left Turn	415	366	88.1%	96.5	31.6	F	
EB	Through	978	833	85.2%	0.7	0.2	Α	
ED	Right Turn	66	59	88.9%	2.8	0.5	Α	
	Subtotal	1,459	1,257	86.2%	29.1	11.9	С	
	Left Turn	30	28	93.7%	104.7	40.2	F	
WB	Through	649	634	97.6%	96.4	37.8	F	
VVB	Right Turn	35	33	93.1%	59.2	37.9	Ε	
	Subtotal	714	694	97.3%	95.0	37.6	F	
	Total	2,809	2,551	90.8%	65.6	26.2	Е	

Lincoln 40 EIR Cumulative No Project AM Peak Hour

Intersection 5 I-80 WB Ramps/Richards Blvd Uncontrolled

		Storage		_	Queue (ft)				Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
	Through	200	37	4	31	44	89	9	73	96	NO
	Right Turn	1,120	37	4	31	44	89	9	73	96	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn										
	Through	1,280	0	0	0	0	108	17	83	141	NO
	Right Turn	1,800	0	0	0	0	27	15	0	51	NO
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
ED	Through										
	Right Turn	560	0	0	0	0	26	8	22	49	NO
	Second Right										
	U Turn										_
	Second Left										
VA/D	Left Turn										
WB	Through										
	Right Turn	1,500	303	157	39	500	1,284	434	447	1,625	NO
	Second Right										

Lincoln 40 EIR
Cumulative No Project
AM Peak Hour

Intersection 6 I-80 EB Ramps/Richards Blvd Signal

		Storage		_	Queue (ft)				Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
	Through	500	309	60	238	402	807	9	795	820	MAX
	Right Turn	500	284	59	214	375	777	9	766	790	MAX
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn	360	29	3	24	34	127	14	107	154	NO
	Through	1,300	17	1	15	19	143	21	116	179	NO
	Right Turn	1,260	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
EB	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn	160	531	234	213	984	1,671	15	1,657	1,695	AVG
VVD	Through										
	Right Turn	1,260	515	245	147	882	1,668	15	1,658	1,695	MAX
	Second Right										

Lincoln 40 EIR Cumulative No Project PM Peak Hour

Intersection 5 I-80 WB Ramps/Richards Blvd Uncontrolled

		Storage		Average (Queue (ft)			Maximum	Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
IND	Through	200	20	6	7	28	90	8	73	96	NO
	Right Turn	1,120	20	6	7	28	90	8	73	96	NO
	Second Right										
	U Turn										
SB	Second Left										
	Left Turn										
	Through	1,280	1	0	0	1	106	13	83	121	NO
	Right Turn	1,800	0	0	0	0	0	0	0	0	NO
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
LD	Through										
	Right Turn	560	0	0	0	0	2	6	0	20	NO
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn										
VVD	Through										
	Right Turn	1,500	0	0	0	0	0	0	0	0	NO
	Second Right										

Lincoln 40 EIR Cumulative No Project PM Peak Hour

Intersection 6 I-80 EB Ramps/Richards Blvd Signal

		Storage		_	Queue (ft)				Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
	Through	500	327	94	156	516	776	94	509	810	MAX
	Right Turn	500	301	93	132	488	747	94	480	780	MAX
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn	360	44	4	36	51	160	18	136	184	NO
36	Through	1,300	46	5	41	52	247	38	198	316	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
ED	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn	160	1,301	49	1,215	1,380	1,687	7	1,673	1,695	AVG
MR	Through										
	Right Turn	1,260	144	281	4	859	641	717	90	1,686	NO
	Second Right										

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Old Davis Rd to Cumulative No AM Peak Hour	o Richards Blv Project	/d			
		Flow Inputs a	nd Adjustments			
Volume, V				5,741	vph	
Peak-hour factor, PHF				0.92		
Peak 15-min volume, v ₁₅				1,560	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length					mi	
Trucks and buses PCE, E_T				1.5		
Recreational vehicle PCE, E _F	•			1.2		
Heavy vehicle adjustment, f	***			0.958		
Driver popoulation factor, f	P			1.00		
Flow rate, v _p				6,515	pcph	
Number of lanes, N				3		
	S	peed Inputs a	nd Adjustments	i		
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				7.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmen	nt, f _{LC}			0.0	mph	
TRD adjustment				16.5	mph	
Calculated free-flow speed,				58.9	mph	
Measured free-flow speed,	FFS				mph	
Free-flow speed curve				65	mph	
	Carrant	to Charles fam.	C			
	Capaci	ty Checks for	Segments with I	ramps		
	<u>Actual</u>		<u>Maximum</u>		Violation?	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
	LC	OS and Perfor	mance Measure	S		
Flow rate, v _p				2,172	pcphpl	
Average passenger-car spee	ed, S			56.6	mph	
Volume-to-capacity ratio, v				0.92	.	
Density, D				38.4	pcpmpl	
Level of service, LOS				E	le e le coolee.	
				_		

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Richards Blvd to Mace Blvd Cumulative No Project AM Peak Hour				
	Flow Inputs ar	nd Adjustments			
Volume, V Peak-hour factor, PHF			5,127 0.92	vph	
Peak 15-min volume, v ₁₅ Trucks and buses Recreational vehicles			1,393 8.8% 0.0%	veh	
Terrain type Grade Length			Level	mi	
Trucks and buses PCE, E_T Recreational vehicle PCE, E_F Heavy vehicle adjustment, E_F Driver popoulation factor, E_F	: HV		1.5 1.2 0.958 1.00		
Flow rate, v _p Number of lanes, N	P		5,818 3	pcph	
-	Speed Inputs a	nd Adjustments	S		
Lane width Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW}			12.0 >6 7.00 0.0	ft ft ramps/mi mph	
Lateral clearance adjustment TRD adjustment Calculated free-flow speed, Measured free-flow speed,	FFS		0.0 16.5 58.9	mph mph mph mph	
Free-flow speed curve			65	mph	
	Capacity Checks for S	Segments with I	Ramps		
Entering freeway volume Exiting freeway volume On-ramp volume Off-ramp volume	Actual pcph pcph pcph pcph	Maximum	pcph pcph pcph pcph	Violation?	
	LOS and Perforr	mance Measure	es		
Flow rate, v _p Average passenger-car spec Volume-to-capacity ratio, v Density, D			1,939 60.9 0.83 31.9	pcphpl mph pcpmpl	
Level of service, LOS			D		

Project Freeway Segment Alternative	Lincoln 40 EIR Westbound I-80 Mace Blvd to Olive Drive Cumulative No Project				
Time period	AM Peak Hour				
	Flow Inputs a	nd Adjustments			
Volume, V			6,028	vph	
Peak-hour factor, PHF			0.96		
Peak 15-min volume, v ₁₅			1,570	veh	
Trucks and buses			8.8%		
Recreational vehicles			0.0%		
Terrain type			Level		
Grade					
Length			4.5	mi	
Trucks and buses PCE, E _T			1.5		
Recreational vehicle PCE, E	•		1.2 0.958		
Heavy vehicle adjustment,					
Driver popoulation factor, f	P		1.00	nenh	
Flow rate, v _p			6,555 3	pcph	
Number of lanes, N			3		
	Speed Inputs a	nd Adjustments	5		
Lana width			12.0	£.	
Lane width Right-side lateral clearance			>6	ft ft	
Total ramp density, TRD			10.00	ramps/mi	
Lane width adjustment, f _{LW}			0.0	mph	
Lateral clearance adjustment			0.0	mph	
TRD adjustment	11c, 1[C		22.3	mph	
Calculated free-flow speed,	EEC		53.1	mph	
Measured free-flow speed,			55.1	mph	
Free-flow speed curve	113		65	mph	
Tree-now speed curve			05	Шрп	
	Capacity Checks for	Segments with I	Ramps		
	<u>Actual</u>	Maximum		Violation?	
Entering freeway volume	<u>Actual</u> pcph	IVIANIIIUIII	pcph	violation:	
Exiting freeway volume	рсрһ		pcph		
On-ramp volume	pcph		pcph		
Off-ramp volume	pcph		pcph		
On ramp volume	рерп		рерп		
	LOS and Perfor	mance Measure	?S		
Flow rate, v _p			2,185	pcphpl	
Average passenger-car spec	2 hc		56.3	mph	
Volume-to-capacity ratio, v			0.93	Πρπ	
Density, D	· ·		38.8	pcpmpl	
Level of service, LOS			56.6 E	ροριτίρι	
LEVEL OF SELVICE, LOS			L		

Project Freeway	Lincoln 40 EIR Westbound I-80 Olive Dr to Richards Blvd				
Segment Alternative	Cumulative No Project				
Time period	AM Peak Hour				
·····e period	Time Continuo				
	Flow Inputs a	nd Adjustments			
Volume, V			5,869	vph	
Peak-hour factor, PHF			0.96		
Peak 15-min volume, v ₁₅			1,528	veh	
Trucks and buses			8.8%		
Recreational vehicles			0.0%		
Terrain type			Level		
Grade					
Length				mi	
Trucks and buses PCE, E _T			1.5		
Recreational vehicle PCE, E	3		1.2		
Heavy vehicle adjustment,	r HV		0.958		
Driver popoulation factor, f	P		1.00		
Flow rate, v _p			6,383	pcph	
Number of lanes, N			3		
	Speed Inputs a	nd Adjustment	s		
Lane width			12.0	ft	
Right-side lateral clearance			>6	ft	
Total ramp density, TRD			10.00	ramps/mi	
Lane width adjustment, f _{LW}			0.0	mph	
Lateral clearance adjustmen	nt, f _{LC}		0.0	mph	
TRD adjustment			22.3	mph	
Calculated free-flow speed,	FFS		53.1	mph	
Measured free-flow speed,	FFS			mph	
Free-flow speed curve			65	mph	
	Capacity Checks for	Segments with	Ramps		
	<u>Actual</u>	<u>Maximum</u>		Violation?	
Entering freeway volume	pcph		pcph		
Exiting freeway volume	pcph		pcph		
On-ramp volume	pcph		pcph		
Off-ramp volume	pcph		pcph		
	LOS and Perfor	mance Measure	۵ς		
-	203 and 1 611011	arree ivicasuit			
Flow rate, v _p			2,128	pcphpl	
Average passenger-car spec	ed, S		57.5	mph	
Volume-to-capacity ratio, v			0.91		
Density, D			37.0	pcpmpl	
Level of service, LOS			Е		

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-80 Richards Blvd to Cumulative No AM Peak Hour	Old Davis R	d			
	F	low Inputs a	nd Adjustments			
Volume, V				5,991	vph	
Peak-hour factor, PHF				0.96		
Peak 15-min volume, v_{15}				1,560	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length					mi	
Trucks and buses PCE, E _T				1.5		
Recreational vehicle PCE, E	₹			1.2		
Heavy vehicle adjustment,	HV			0.958		
Driver popoulation factor, f	P			1.00		
Flow rate, v _p				6,515	pcph	
Number of lanes, N				4		
	Sp	eed Inputs a	nd Adjustments			
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				10.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmen	nt f. c			0.0	mph	
TRD adjustment	··, ·[[22.3	mph	
Calculated free-flow speed,	EEC			53.1	mph	
Measured free-flow speed,				33.1	mph	
Free-flow speed curve	113			65	mph	
riee-now speed curve				05	Шрп	
	Capacity	Checks for	Segments with R	amps		
	Actual		Maximum		Violation?	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
		lh		L-h		
	LO	S and Perfor	mance Measures	;		
Flow rate, v _p				1,629	pcphpl	
Average passenger-car spec	ed, S			64.3	mph	
Volume-to-capacity ratio, v				0.69		
Density, D				25.3	pcpmpl	
Level of service, LOS				С		

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Old Davis Rd to Cumulative No PM Peak Hour	Richards Blv	/d			
	F	Flow Inputs ar	nd Adjustments	;		
Volume, V Peak-hour factor, PHF				5,790 0.92	vph	
Peak 15-min volume, v ₁₅ Trucks and buses Recreational vehicles				1,573 8.8% 0.0%	veh	
Terrain type Grade Length				Level	mi	
Trucks and buses PCE, E _T Recreational vehicle PCE, E _t Heavy vehicle adjustment, f Driver popoulation factor, f	HV			1.5 1.2 0.958 1.00	1111	
Flow rate, v _p Number of lanes, N	P			6,570 3	pcph	
	S	peed Inputs a	nd Adjustment	S		
Lane width Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Lateral clearance adjustment TRD adjustment Calculated free-flow speed,				12.0 >6 7.00 0.0 0.0 16.5 58.9	ft ft ramps/mi mph mph mph mph	
Measured free-flow speed, Free-flow speed curve				65	mph mph	
	Capacit	y Checks for S	Segments with	Ramps		
Entering freeway volume Exiting freeway volume On-ramp volume Off-ramp volume	<u>Actual</u>	pcph pcph pcph pcph	<u>Maximum</u>	pcph pcph pcph pcph	<u>Violation?</u>	
	LC	S and Perfor	mance Measure	es		
Flow rate, v _p Average passenger-car spee Volume-to-capacity ratio, v _p Density, D				2,190 56.1 0.93 39.0	pcphpl mph pcpmpl	
Level of service, LOS				E		

		1011017111017515			
Project	Lincoln 40 EIR				
Freeway	Eastbound I-80				
Segment	Richards Blvd to Mace Blvd				
Alternative	Cumulative No Project				
Time period	PM Peak Hour				
	Flow Inputs ar	nd Adjustments			
Maluma M			F 10F	, and h	
Volume, V			5,195	vph	
Peak-hour factor, PHF			0.92		
Peak 15-min volume, v ₁₅			1,412	veh	
Trucks and buses			8.8%		
Recreational vehicles			0.0%		
Terrain type			Level		
Grade					
Length				mi	
Trucks and buses PCE, E_T			1.5		
Recreational vehicle PCE, E	•		1.2		
Heavy vehicle adjustment, f			0.958		
Driver popoulation factor, f	P		1.00		
Flow rate, v _p			5,895	pcph	
Number of lanes, N			3		
	Speed Inputs a	nd Adjustments			
Lane width			12.0	ft	
Right-side lateral clearance			>6	ft	
Total ramp density, TRD			7.00	ramps/mi	
Lane width adjustment, f _{LW}			0.0	mph	
Lateral clearance adjustmen	nt. f.c		0.0	mph	
TRD adjustment	-, tc		16.5	mph	
Calculated free-flow speed,	FFS		58.9	mph	
Measured free-flow speed,			30.3	mph	
Free-flow speed curve	113		65	mph	
Tree-now speed curve			03	тірп	
	Capacity Checks for S	Segments with R	Ramps		
	<u>Actual</u>	<u>Maximum</u>		Violation?	
Entering freeway volume	pcph		pcph		
Exiting freeway volume	pcph		pcph		
On-ramp volume	pcph		pcph		
Off-ramp volume	pcph		pcph		
On ramp volume	рерп		рерп		
	LOS and Perforr	mance Measure	S		
Flow rate, v _p			1,965	pcphpl	
Average passenger-car spec	ed. S		60.5	mph	
Volume-to-capacity ratio, v			0.84	יויקייי	
Density, D	, •		32.5	pcpmpl	
Level of service, LOS			52.5 D	рерпірі	
Level of service, LOS			U		

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-80 Mace Blvd to Olive Drive Cumulative No Project PM Peak Hour				
- Time period	rivi reak i loui				
	Flow Inputs a	nd Adjustments			
Volume, V			5,499	vph	
Peak-hour factor, PHF			0.95	VPII	
Peak 15-min volume, v ₁₅			1,447	veh	
Trucks and buses			8.8%		
Recreational vehicles			0.0%		
Terrain type			Level		
Grade					
Length				mi	
Trucks and buses PCE, E _T			1.5		
Recreational vehicle PCE, E	₹		1.2		
Heavy vehicle adjustment,	f HV		0.958		
Driver popoulation factor, f	: P		1.00		
Flow rate, v _p			6,043	pcph	
Number of lanes, N			3		
	Speed Inputs a	ınd Adjustments	S		
	- P P		-		
Lane width			12.0	ft	
Right-side lateral clearance			>6	ft	
Total ramp density, TRD			10.00	ramps/mi	
Lane width adjustment, f _{LW}			0.0	mph	
Lateral clearance adjustmen	nt, f _{LC}		0.0	mph	
TRD adjustment			22.3	mph	
Calculated free-flow speed,	FFS		53.1	mph	
Measured free-flow speed,	FFS			mph	
Free-flow speed curve			65	mph	
	Capacity Checks for	Segments with I	Ramps		
	<u>Actual</u>	Maximum		Violation?	
Entering freeway volume	<u>Actual</u> pcph	<u>iviaxilliulli</u>	pcph	<u>violation:</u>	
Exiting freeway volume	рсрһ		pcph		
On-ramp volume	pcph		pcph		
Off-ramp volume	pcph		pcph		
on rump volume	рорп		рерп		
	LOS and Perfor	mance Measure	es		
Flow rate, v _p			2,014	pcphpl	
Average passenger-car spec	ed S		59.6	mph	
Volume-to-capacity ratio, v			0.86	ρ.ι	
Density, D	, ~		33.8	pcpmpl	
Level of service, LOS			D	Pobb.	

Project Freeway Segment Alternative	Lincoln 40 EIR Westbound I-8 Olive Dr to Ricl Cumulative No PM Peak Hour	nards Blvd								
Time period	PIVI PEAK HOUF									
Flow Inputs and Adjustments										
Volume, V				5,341	vph					
Peak-hour factor, PHF				0.95	·					
Peak 15-min volume, v ₁₅	1,406	veh								
Trucks and buses				8.8%						
Recreational vehicles				0.0%						
Terrain type				Level						
Grade										
Length					mi					
Trucks and buses PCE, E _T				1.5						
Recreational vehicle PCE, E _R				1.2						
Heavy vehicle adjustment, f	HV			0.958						
Driver popoulation factor, f)			1.00						
Flow rate, v _p				5,869	pcph					
Number of lanes, N				3						
	S	peed Inputs a	nd Adiustment	S						
	Speed Inputs and Adjustments									
Lane width				12.0	ft					
Right-side lateral clearance				>6	ft					
Total ramp density, TRD				10.00	ramps/mi					
Lane width adjustment, f _{LW}				0.0	mph					
Lateral clearance adjustmen	it, f _{LC}			0.0	mph					
TRD adjustment				22.3	mph					
Calculated free-flow speed,	FFS			53.1	mph					
Measured free-flow speed,	FFS				mph					
Free-flow speed curve				65	mph					
	Capacit	ty Checks for S	Segments with	Ramps						
	<u>Actual</u>		<u>Maximum</u>		Violation?					
Entering freeway volume		pcph		pcph						
Exiting freeway volume		pcph		pcph						
On-ramp volume		pcph		pcph						
Off-ramp volume		pcph		pcph						
LOS and Performance Measures										
Flow rate, v_p	1,956	pcphpl								
Average passenger-car spee	60.6	mph								
Volume-to-capacity ratio, v	0.83									
Density, D	32.3	pcpmpl								
Level of service, LOS		D								

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-8 Richards Blvd t Cumulative No PM Peak Hour	o Old Davis R	d						
Flow Inputs and Adjustments									
Volume, V				6,116	vph				
Peak-hour factor, PHF				0.95					
Peak 15-min volume, v ₁₅				1,609	veh				
Trucks and buses				8.8%					
Recreational vehicles				0.0%					
Terrain type				Level					
Grade									
Length					mi				
Trucks and buses PCE, E _T				1.5					
Recreational vehicle PCE, E _R				1.2					
Heavy vehicle adjustment, f				0.958					
Driver popoulation factor, f	P			1.00					
Flow rate, v _p				6,721	pcph				
Number of lanes, N				4					
-	S	peed Inputs a	nd Adjustments	i					
				42.0	6.				
Lane width				12.0	ft				
Right-side lateral clearance				>6	ft				
Total ramp density, TRD				10.00	ramps/mi				
Lane width adjustment, f _{LW}				0.0	mph				
Lateral clearance adjustmer	it, i _{LC}			0.0	mph				
TRD adjustment	FFC			22.3	mph				
Calculated free-flow speed,				53.1	mph				
Measured free-flow speed,	FF3			CF	mph				
Free-flow speed curve				65	mph				
	Capaci	ty Checks for	Segments with F	Ramps					
	Actual		Mavimum		Violation?				
Entering freeway volume	<u>Actual</u>	nenh	<u>Maximum</u>	nenh	<u>Violation?</u>				
Exiting freeway volume		pcph pcph		pcph pcph					
On-ramp volume				pcph					
Off-ramp volume		pcph							
On-ramp volume		pcph		pcph					
LOS and Performance Measures									
Flow rate, v _p				1,680	pcphpl				
Average passenger-car spee	od S			63.9	mph				
Volume-to-capacity ratio, v,				03.9	πρπ				
Density, D				26.3	pcpmpl				
Level of service, LOS				20.3 D	рерпірі				
LEVEL OF SELVICE, LOS				D					

Appendix D – Cumulative Plus Project

Vissim Post-Processor

Average Results from 10 Runs

Volume and Delay by Movement

Lincoln 40 EIR Cumulative Plus Project AM Peak Hour

Intersection 1 D St/1st St Signal

		Demand	Served Vo	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn	12	13	106.7%	49.4	13.2	D	
NB	Through	17	13	78.8%	40.6	22.8	D	
IND	Right Turn	28	26	92.9%	6.4	1.6	Α	
	Subtotal	57	52	91.6%	25.2	6.5	С	
	Left Turn	57	53	93.3%	46.6	15.8	D	
CD	Through	32	32	99.1%	52.0	21.7	D	
SB	Right Turn	56	56	99.8%	14.5	3.8	В	
	Subtotal	145	141	97.1%	34.3	10.5	С	
	Left Turn	2	1	65.0%	24.1	54.9	С	
EB	Through	341	338	99.1%	22.2	9.1	С	
LB	Right Turn	31	28	91.6%	26.4	18.5	С	
	Subtotal	374	368	98.3%	22.6	9.7	С	
	Left Turn	30	25	83.3%	65.7	13.3	Ε	
WB	Through	481	415	86.3%	7.6	1.8	Α	
VVD	Right Turn	51	46	90.8%	5.9	1.9	Α	
	Subtotal	562	487	86.6%	10.1	1.9	В	
	Total	1,138	1,047	92.0%	18.7	4.2	В	

Intersection 2 E St-Richards Blvd/1st St Signal

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	495	425	85.8%	41.9	12.4	D
NB	Through	158	131	82.7%	38.8	11.3	D
IND	Right Turn	269	215	80.1%	15.3	6.8	В
	Subtotal	922	771	83.6%	34.2	10.6	С
	Left Turn	1	1	110.0%	9.4	20.6	А
CD	Through	171	165	96.4%	33.8	2.7	С
SB	Right Turn	10	12	116.0%	11.1	6.8	В
	Subtotal	182	178	97.5%	32.6	3.2	С
	Left Turn	9	8	91.1%	62.0	36.9	E
EB	Through	34	35	102.4%	63.8	19.1	Ε
ED	Right Turn	383	378	98.6%	16.6	4.0	В
	Subtotal	426	421	98.8%	22.3	3.9	С
	Left Turn	136	131	96.0%	45.2	4.3	D
WB	Through	57	56	97.4%	38.4	10.6	D
VVD	Right Turn	3	3	106.7%	7.8	13.3	Α
	Subtotal	196	189	96.5%	43.2	4.7	D
	Total	1,726	1,558	90.3%	31.7	5.1	С

Intersection 3

Olive Dr/Olive Dr Off-Ramp

Side-street Stop

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through						
IND	Right Turn						
	Subtotal						
	Left Turn						
SB	Through						
36	Right Turn						
	Subtotal						
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
WB	Left Turn						
	Through	161	158	98.0%	0.5	0.1	Α
VVD	Right Turn						
	Subtotal	161	158	98.0%	0.5	0.1	А
	Total	161	158	98.0%	0.5	0.1	А

Intersection 4

Olive Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	216	166	76.6%	85.5	10.6	F
NB	Through	682	544	79.7%	261.1	53.0	F
IND	Right Turn	46	35	76.5%	84.8	22.4	F
	Subtotal	944	744	78.9%	211.1	40.7	F
	Left Turn	64	59	92.3%	30.0	4.8	С
S.D.	Through	514	508	98.9%	24.5	4.7	С
SB	Right Turn	112	106	94.7%	19.4	4.3	В
	Subtotal	690	674	97.6%	24.4	4.3	С
	Left Turn	64	59	92.7%	31.1	11.3	С
EB	Through	12	11	90.0%	24.0	12.2	С
LD	Right Turn	84	83	99.0%	16.8	9.1	В
_	Subtotal	160	153	95.8%	22.7	10.2	С
	Left Turn	122	115	93.9%	26.2	3.2	С
WB	Through	26	26	98.8%	38.9	11.1	D
WB	Right Turn	176	167	95.0%	35.7	8.0	D
	Subtotal	324	307	94.9%	32.8	6.0	С
	Total	2,118	1,879	88.7%	99.1	13.3	F

I-80 WB Ramps/Richards Blvd

Uncontrolled

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	469	367	78.3%	194.8	23.9	F
IND	Right Turn	615	504	81.9%	1.9	0.5	Α
	Subtotal	1,084	871	80.4%	84.2	7.7	F
	Left Turn						
SB	Through	522	509	97.5%	0.7	0.1	Α
36	Right Turn	201	196	97.4%	1.4	0.3	Α
	Subtotal	723	704	97.4%	0.9	0.1	Α
	Left Turn						
EB	Through						
LB	Right Turn	212	204	96.4%	0.9	0.2	Α
	Subtotal	212	204	96.4%	0.9	0.2	Α
	Left Turn						
WB	Through						
	Right Turn	479	388	81.0%	627.9	98.2	F
	Subtotal	479	388	81.0%	627.9	98.2	F
	Total	2,498	2,168	86.8%	147.7	15.4	F

Intersection 6

I-80 EB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	850	712	83.8%	161.1	15.8	F
IND	Right Turn	93	79	85.3%	152.1	48.7	F
	Subtotal	943	791	83.9%	160.3	17.6	F
	Left Turn	251	248	98.7%	34.7	8.0	С
SB	Through	483	468	96.9%	12.0	1.3	В
36	Right Turn						
	Subtotal	734	716	97.5%	20.1	3.3	С
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn	724	571	78.9%	418.0	106.8	F
WB	Through						
	Right Turn	234	187	79.7%	529.9	126.6	F
	Subtotal	958	758	79.1%	448.7	114.8	F
	Total	2,635	2,265	86.0%	199.8	21.8	F

Vissim Post-Processor

Average Results from 10 Runs

Volume and Delay by Movement

Lincoln 40 EIR Cumulative Plus Project AM Peak Hour

Intersection 7

Research Park Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	72	70	97.1%	78.3	30.3	Е
NB	Through	6	6	96.7%	32.1	20.7	С
IND	Right Turn	38	37	96.3%	5.8	1.5	Α
	Subtotal	116	112	96.8%	56.5	22.7	Е
	Left Turn	33	30	92.1%	261.2	156.4	F
SB	Through	27	25	92.2%	340.6	149.7	F
36	Right Turn	138	114	82.8%	345.2	178.7	F
	Subtotal	198	170	85.7%	327.9	170.0	F
	Left Turn	336	295	87.7%	53.9	7.1	D
EB	Through	728	614	84.3%	0.3	0.1	Α
LB	Right Turn	143	130	90.6%	5.3	Average Std. Dev. Let 78.3 30.3 32.1 20.7 5.8 1.5 56.5 22.7 261.2 156.4 340.6 149.7 345.2 178.7 327.9 170.0 53.9 7.1 0.3 0.1 5.3 0.6 16.1 2.6 193.8 15.9 205.4 20.9 146.1 15.5 200.4 19.8 19.8	Α
	Subtotal	1,207	1,038	86.0%	16.1	2.6	В
	Left Turn	36	31	86.7%	193.8	15.9	F
WB	Through	699	612	87.5%	205.4	20.9	F
WB	Right Turn	68	57	83.7%	146.1	15.5	F
	Subtotal	803	700	87.1%	200.4	19.8	F
	Total	2,324	2,019	86.9%	109.7	20.6	F

Vissim Post-Processor

Average Results from 10 Runs

Volume and Delay by Movement

Lincoln 40 EIR Cumulative Plus Project PM Peak Hour

Intersection 1 D St/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	31	30	95.5%	22.4	4.6	С
NB	Through	40	41	101.3%	26.7	4.3	С
IND	Right Turn	63	62	98.3%	22.7	6.9	С
,	Subtotal	134	132	98.5%	23.9	3.4	С
	Left Turn	152	140	92.3%	226.8	77.2	F
SB	Through	35	35	99.7%	222.3	91.6	F
SD	Right Turn	39	38	97.9%	163.3	70.7	F
	Subtotal	226	213	94.4%	216.3	77.5	F
	Left Turn	15	8	55.3%	346.3	52.1	F
EB	Right Turn 63 62 98.3% 22.7 Subtotal 134 132 98.5% 23.9 Left Turn 152 140 92.3% 226.8 Through 35 35 99.7% 222.3 Right Turn 39 38 97.9% 163.3 Subtotal 226 213 94.4% 216.3	70.4	F				
ED	Right Turn	59	30 95.5% 22.4 4.6 41 101.3% 26.7 4.3 62 98.3% 22.7 6.9 132 98.5% 23.9 3.4 140 92.3% 226.8 77.2 35 99.7% 222.3 91.6 38 97.9% 163.3 70.7 213 94.4% 216.3 77.5 8 55.3% 346.3 52.1 272 59.3% 373.2 70.4 32 54.2% 370.7 76.1 313 58.6% 372.1 69.1 71 92.1% 34.2 4.7 364 94.9% 15.0 3.0 43 88.2% 11.4 4.2	F			
	Subtotal	533	313	58.6%	372.1	69.1	F
	Left Turn	77	71	92.1%	34.2	4.7	С
WB	Through	383	364	94.9%	15.0	3.0	В
	Right Turn	49	43	88.2%	11.4	4.2	В
	Subtotal	509	478	93.8%	17.3	2.6	В
	Total	1,402	1,136	81.0%	149.2	19.0	F

Intersection 2 E St-Richards Blvd/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	384	361	93.9%	39.7	6.3	D
	Through	186	176	94.8%	37.8	5.0	D
	Right Turn	316	282	89.1%	14.6	5.0	В
	Subtotal	886	819	92.4%	31.1	4.8	С
	Left Turn	7	6	90.0%	28.4	22.9	С
SB	Through	199	197	99.0%	81.1	25.0	F
36	Right Turn	23	23	99.6%	40.6	23.8	D
	Subtotal	229	226	98.8%	76.7	23.8	Е
	Left Turn	10	9	86.0%	73.2	63.1	Е
EB	Through	63	53	84.0%	90.7	9.6	F
ED	Right Turn	601	419	69.8%	55.1	11.4	Е
	Subtotal	674	481	71.3%	59.3	10.4	Е
	Left Turn	223	219	98.0%	159.8	66.9	F
WB	Through	102	97	95.1%	42.8	5.7	D
VVB	Right Turn	6	7	118.3%	25.7	21.4	С
	Subtotal	331	323	97.5%	123.1	48.4	F
	Total	2,120	1,848	87.2%	59.5	11.5	E

Olive Dr/Olive Dr Off-Ramp

Side-street Stop

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through						
IND	Right Turn						
	Subtotal						
	Left Turn						
SB	Through						
36	Right Turn						
	Subtotal						
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn						
WB	Through	161	165	102.2%	0.5	0.1	Α
	Right Turn						
	Subtotal	161	165	102.2%	0.5	0.1	А
	Total	161	165	102.2%	0.5	0.1	А

Intersection 4

Richards Blvd/Olive Dr

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	133	104	78.3%	96.6	10.3	F
	Through	547	487	89.0%	156.5	67.1	F
	Right Turn	71	51	72.4%	69.5	28.4	Ε
	Subtotal	751	642	85.5%	139.6	53.0	F
	Left Turn	113	104	92.3%	68.9	6.2	Е
SB	Through	825	653	79.1%	59.1	4.7	Ε
36	Right Turn	85	75	88.5%	53.4	5.9	D
	Subtotal	1,023	832	81.3%	59.9	4.4	Е
	Left Turn	137	138	101.0%	32.6	9.8	С
EΒ	Through	18	18	97.8%	26.0	11.3	С
EB	Right Turn	138	135	98.0%	27.3	9.5	С
	Subtotal	293	291	99.4%	29.8	9.2	С
	Left Turn	160	164	102.2%	46.8	12.0	D
WB	Through	25	26	103.6%	33.8	16.1	С
WB	Right Turn	202	195	96.3%	32.4	15.6	С
	Subtotal	387	384	99.2%	39.1	11.3	D
	Total	2,454	2,150	87.6%	75.2	15.7	E

Richards Blvd/I-80 WB Ramps

Uncontrolled

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	528	437	82.8%	165.6	36.4	F
IND	Right Turn	771	701	90.9%	2.1	0.6	Α
	Subtotal	1,299	1,138	87.6%	64.2	12.2	F
	Left Turn						
SB	Through	824	676	82.0%	0.9	0.3	Α
36	Right Turn	353	330	93.5%	2.3	0.5	Α
	Subtotal	1,177	1,006	85.5%	1.4	0.3	Α
	Left Turn						
EB	Through						
LB	Right Turn	116	114	98.1%	0.8	0.2	Α
	Subtotal	116	114	98.1%	0.8	0.2	Α
	Left Turn						
WB	Through						
VVD	Right Turn	229	227	99.3%	43.5	31.6	Е
	Subtotal	229	227	99.3%	43.5	31.6	Е
	Total	2,821	2,485	88.1%	33.0	5.3	D

Intersection 6

I-80 EB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	1,100	1,012	92.0%	90.4	20.4	F
IND	Right Turn	128	116	90.9%	161.1	44.0	F
	Subtotal	1,228	1,128	91.8%	97.6	21.3	F
	Left Turn	296	219	73.9%	55.9	3.3	Е
SB	Through	644	571	88.6%	33.4	12.6	С
36	Right Turn						
	Subtotal	940	790	84.0%	39.2	9.2	D
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn	821	651	79.3%	316.0	152.7	F
WB	Through						
WB	Right Turn	199	158	79.2%	306.6	150.5	F
	Subtotal	1,020	809	79.3%	313.9	152.1	F
	Total	3,188	2,726	85.5%	128.0	25.4	F

Vissim Post-Processor

Average Results from 10 Runs

Volume and Delay by Movement

Lincoln 40 EIR Cumulative Plus Project PM Peak Hour

Intersection 7

Research Park Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	92	89	96.6%	66.3	7.6	E
NB	Through	24	23	95.8%	34.7	9.8	С
IND	Right Turn	66	67	101.2%	10.8	4.1	В
	Subtotal	182	179	98.2%	41.9	4.8	D
	Left Turn	40	36	90.3%	189.6	55.5	F
CD	Through	15	12	81.3%	163.1	64.8	F
30	Right Turn	401	358	89.3%	192.2	66.6	F
	Subtotal	456	406	89.1%	191.3	61.6	F
	Left Turn	417	356	85.3%	121.6	56.2	F
FR	Through	981	808	82.4%	0.8	0.4	Α
SB R	Right Turn	67	57	85.2%	2.9	0.7	Α
	Subtotal	1,465	1,221	83.4%	35.3	13.2	D
	Left Turn	30	30	99.7%	145.0	45.9	F
WB	Through	651	627	96.3%	138.3	43.0	F
VVD	Right Turn	35	33	94.0%	85.8	42.1	F
	Subtotal	716	690	96.3%	136.2	42.5	F
	Total	2,819	2,496	88.5%	91.1	23.3	F

Intersection 1 D St/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	12	12	95.8%	42.0	14.5	D
	Through	17	13	78.2%	45.4	15.8	D
	Right Turn	28	27	96.4%	5.8	1.2	Α
	Subtotal	57	52	90.9%	24.3	6.7	С
	Left Turn	57	53	93.7%	45.5	11.0	D
SB	Through	32	30	92.5%	42.1	9.2	D
3D	Right Turn	56	57	100.9%	12.1	4.2	В
	Subtotal	145	140	96.2%	30.8	6.0	С
	Left Turn	2	2	75.0%	33.5	65.3	С
EB	Through	341	341	99.9%	18.5	8.1	В
ED	Right Turn	31	28	89.0%	24.1	14.8	С
	Subtotal	374	370	98.9%	19.3	8.9	В
'	Left Turn	30	26	86.7%	67.5	7.8	E
WB	Through	481	442	92.0%	4.0	1.8	Α
WB	Right Turn	51	48	94.3%	2.5	1.0	Α
	Subtotal	562	517	91.9%	7.4	2.5	А
	Total	1,138	1,078	94.7%	15.3	2.8	В

Intersection 2 E St-Richards Blvd/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	495	454	91.8%	15.6	2.0	В
	Through	158	143	90.8%	16.1	2.3	В
ND	Right Turn	269	237	88.1%	4.2	1.4	Α
	Subtotal	922	835	90.5%	12.4	1.8	В
	Left Turn	1	1	80.0%	12.7	27.2	В
SR	Through	171	164	96.1%	38.7	4.2	D
36	Right Turn	10	12	122.0%	9.9	7.9	Α
	Subtotal	182	177	97.4%	37.1	4.3	D
	Left Turn	9	9	96.7%	55.0	32.2	Ε
FR	Through	34	34	100.9%	70.5	15.8	Ε
Right Turn Subtot Left Turn Through Right Turn Subtot Left Turn Through Right Turn Through Right Turn Subtot Left Turn Through Right Turn Through Right Turn Subtot Left Turn Through Right Turn	Right Turn	383	382	99.7%	10.1	2.1	В
	Subtotal	426	425	99.7%	16.2	4.5	В
	Left Turn	136	132	96.8%	49.3	4.8	D
\M/R	Through	57	55	96.3%	42.3	9.2	D
VVD	Right Turn	3	3	110.0%	9.4	15.6	Α
	Subtotal	196	190	96.8%	46.4	5.0	D
	Total	1,726	1,627	94.2%	20.6	1.8	С

Olive Dr/Olive Dr Off-Ramp

Side-street Stop

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through						
IND	Right Turn						
	Subtotal						
	Left Turn						
SB	Through						
36	Right Turn						
	Subtotal						
	Left Turn						
EB	Through						
ED	Right Turn						
	Subtotal						
	Left Turn						
WB	Through	161	158	98.0%	0.5	0.0	Α
	Right Turn						
	Subtotal	161	158	98.0%	0.5	0.0	Α
	Total	161	158	98.0%	0.5	0.0	Α

Intersection 4

Olive Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	216	190	88.1%	89.1	8.5	F
NB	Through	682	607	89.0%	113.8	49.9	F
NB	Right Turn	46	40	87.2%	61.0	18.5	Е
	Subtotal	944	838	88.7%	105.3	37.7	F
	Left Turn	64	60	93.4%	46.0	11.7	D
SB	Through	514	508	98.8%	17.8	5.1	В
36	Right Turn	112	111	99.0%	12.7	5.1	В
	Subtotal	690	678	98.3%	19.6	5.1	В
	Left Turn	64	61	94.5%	49.7	13.1	D
EB	Through	12	11	89.2%	28.4	24.5	С
LB	Right Turn	84	80	95.7%	27.2	7.8	С
	Subtotal	160	152	94.8%	35.7	9.2	D
	Left Turn	122	112	91.8%	44.9	5.4	D
WB	Through	26	28	108.5%	49.9	15.1	D
	Right Turn	176	166	94.1%	26.2	4.8	С
	Subtotal	324	306	94.4%	35.4	3.3	D
	Total	2,118	1,973	93.2%	59.4	14.6	Е

I-80 WB Ramps/Richards Blvd

Uncontrolled

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	469	424	90.4%	156.1	28.3	F
IND	Right Turn	615	568	92.3%	1.8	0.4	Α
	Subtotal	1,084	992	91.5%	71.3	15.0	F
	Left Turn						
CD	Through	522	504	96.5%	0.8	0.1	Α
SB	Right Turn	201	196	97.5%	1.5	0.4	Α
	Subtotal	723	700	96.8%	1.0	0.2	Α
	Left Turn						
EB	Through						
EB	Right Turn	212	204	96.1%	0.8	0.1	Α
	Subtotal	212	204	96.1%	0.8	0.1	Α
	Left Turn						
WB	Through						
	Right Turn	479	431	90.0%	256.7	143.3	F
	Subtotal	479	431	90.0%	256.7	143.3	F
	Total	2,498	2,326	93.1%	77.3	29.2	F

Intersection 6

I-80 EB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	850	803	94.4%	63.1	39.8	Е
IND	Right Turn	93	89	95.9%	51.4	33.7	D
	Subtotal	943	892	94.6%	62.0	39.2	Е
'	Left Turn	251	240	95.6%	35.5	5.9	D
SB	Through	483	465	96.3%	12.0	1.4	В
30	Right Turn						
	Subtotal	734	705	96.0%	20.2	2.6	С
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn	724	695	96.0%	64.9	59.7	Е
\A/B	Through						
WB	Right Turn	234	222	95.0%	91.0	86.3	F
	Subtotal	958	917	95.8%	71.0	65.0	Е
	Total	2,635	2,514	95.4%	53.7	37.5	D

Vissim Post-Processor Average Results from 10 Runs Volume and Delay by Movement Lincoln 40 EIR
Cumulative Plus Project (Mitigated)
AM Peak Hour

Intersection 7

Research Park Dr/Richards Blvd

Signal

	1	Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	72	70	96.7%	63.2	19.0	E
SB	Through	6	6	98.3%	33.5	24.9	С
IND	Right Turn	38	36	95.0%	6.2	1.8	Α
	Subtotal	116	112	96.2%	45.5	14.8	D
	Left Turn	33	32	96.1%	58.8	10.6	E
CD	Through	27	27	101.5%	53.6	24.9	D
SB	Right Turn	138	130	94.5%	25.8	21.4	С
	Subtotal	198	190	95.7%	35.4	18.0	D
SB I	Left Turn	336	319	95.1%	52.7	7.6	D
	Through	728	700	96.2%	0.3	0.1	Α
LD	Right Turn	143	139	97.4%	5.1	1.1	Α
	Subtotal	1,207	1,159	96.0%	15.4	2.5	В
	Left Turn	36	34	93.9%	74.0	12.4	E
WB	Through	699	671	96.0%	42.7	14.6	D
	Right Turn	68	64	94.4%	21.5	8.1	С
	Subtotal	803	769	95.7%	42.4	13.4	D
	Total	2,324	2,229	95.9%	27.7	6.6	С

Intersection 1 D St/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	31	28	88.7%	25.7	4.6	С
NB	Through	40	40	100.3%	20.7	6.4	С
IND	Right Turn	63	64	101.1%	17.8	5.6	В
	Subtotal	134	131	98.0%	20.3	2.3	С
	Left Turn	152	145	95.3%	125.7	65.3	F
CD	Through	35	38	108.6%	123.4	66.0	F
SB	Right Turn	39	39	100.0%	82.6	53.7	F
	Subtotal	226	222	98.2%	117.3	62.2	F
EB	Left Turn	15	9	60.0%	303.2	112.2	F
	Through	459	312	68.1%	323.5	46.7	F
ED	Right Turn	59	37	62.4%	305.2	52.5	F
	Subtotal	533	358	67.2%	322.9	45.6	F
'	Left Turn	77	76	98.6%	33.0	4.9	С
WB	Through	383	388	101.3%	14.2	2.4	В
	Right Turn	49	49	99.8%	11.3	3.3	В
	Subtotal	509	513	100.7%	16.8	2.5	В
	Total	1,402	1,224	87.3%	121.6	14.3	F

Intersection 2 E St-Richards Blvd/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	384	388	101.0%	23.3	5.4	С
NB	Through	186	187	100.6%	25.9	3.7	С
ND	Right Turn	316	300	95.0%	7.7	2.6	Α
	Subtotal	886	875	98.8%	18.2	4.2	В
	Left Turn	7	5	70.0%	104.1	95.0	F
SR	Through	199	198	99.2%	147.5	58.5	F
SB	Right Turn	23	23	100.0%	84.9	45.1	F
	Subtotal	229	225	98.4%	141.2	58.1	F
NB II SB III	Left Turn	10	10	95.0%	99.0	60.5	F
	Through	63	58	91.7%	91.8	19.7	F
LD	Right Turn	601	457	76.0%	43.0	10.5	D
	Subtotal	674	524	77.7%	49.2	10.6	D
	Left Turn	223	215	96.5%	87.8	31.3	F
WB	Through	102	103	100.9%	45.9	5.9	D
	Right Turn	6	7	113.3%	27.5	29.6	С
	Subtotal	331	325	98.2%	73.5	19.3	Е
	Total	2,120	1,949	91.9%	50.3	12.4	D

Olive Dr/Olive Dr Off-Ramp

Side-street Stop

		Demand	Served Vol	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through						
IND	Right Turn						
	Subtotal						
	Left Turn						
SB	Through						
36	Right Turn						
	Subtotal						
	Left Turn						
EB	Through						
LD	Right Turn						
	Subtotal						
	Left Turn						
WB	Through	161	166	102.9%	0.5	0.1	Α
	Right Turn						
	Subtotal	161	166	102.9%	0.5	0.1	Α
	Total	161	166	102.9%	0.5	0.1	Α

Intersection 4

Richards Blvd/Olive Dr

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	133	122	91.4%	98.1	21.7	F
NB	Through	547	546	99.8%	46.0	13.8	D
NB	Right Turn	71	60	84.2%	29.2	19.8	С
	Subtotal	751	728	96.9%	54.7	15.7	D
	Left Turn	113	112	98.8%	71.5	14.2	Е
CD	Through	825	686	83.2%	52.8	7.4	D
36	Right Turn	85	77	90.1%	48.2	8.9	D
	Subtotal	1,023	874	85.5%	54.7	8.2	D
SB EB	Left Turn	137	134	97.9%	49.0	16.2	D
	Through	18	18	98.3%	38.9	17.8	D
LB	Right Turn	138	135	97.5%	35.9	12.7	D
	Subtotal	293	286	97.7%	42.4	13.7	D
	Left Turn	160	160	100.1%	73.2	43.2	Ε
WB	Through	25	25	101.6%	44.2	24.2	D
	Right Turn	202	199	98.5%	30.8	18.2	С
	Subtotal	387	385	99.4%	49.9	29.7	D
	Total	2,454	2,273	92.6%	52.1	10.0	D

Richards Blvd/I-80 WB Ramps

Uncontrolled

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
SB	Through	528	508	96.2%	29.4	29.3	D
IND	Right Turn	771	762	98.8%	3.3	0.4	Α
	Subtotal	1,299	1,270	97.8%	14.3	12.5	В
	Left Turn						
CD	Through	824	705	85.6%	1.0	0.3	Α
36	Right Turn	353	333	94.3%	1.9	0.4	Α
SB	Subtotal	1,177	1,038	88.2%	1.2	0.3	Α
	Left Turn						
	Through						
LB	Right Turn	116	114	98.4%	1.0	0.3	Α
	Subtotal	116	114	98.4%	1.0	0.3	Α
	Left Turn						
\A/R	Through						
WB	Right Turn	229	227	99.0%	3.3	3.2	Α
	Subtotal	229	227	99.0%	3.3	3.2	Α
	Total	2,821	2,649	93.9%	7.7	6.2	Α

Intersection 6

I-80 EB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	1,100	1,092	99.3%	25.4	2.3	С
IND	Right Turn	128	125	98.0%	42.4	6.4	D
	Subtotal	1,228	1,218	99.1%	27.1	2.4	С
'	Left Turn	296	237	80.1%	60.2	5.5	E
SB	Through	644	584	90.7%	22.0	3.2	С
3D	Right Turn						
	Subtotal	940	821	87.3%	32.6	2.2	С
'	Left Turn						
EB	Through						
ED	Right Turn						
	Subtotal						
	Left Turn	821	738	89.9%	170.8	28.3	F
\A/D	Through						
WB	Right Turn	199	176	88.6%	147.9	19.7	F
	Subtotal	1,020	914	89.6%	166.8	27.0	F
	Total	3,188	2,952	92.6%	71.4	5.2	Е

Vissim Post-Processor Average Results from 10 Runs Volume and Delay by Movement Lincoln 40 EIR
Cumulative Plus Project (Mitigated)
PM Peak Hour

Intersection 7

Research Park Dr/Richards Blvd

Signal

	1	Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	92	87	95.0%	61.5	7.4	E
NB	Through	24	25	102.5%	33.1	11.6	С
IND	Right Turn	66	66	99.7%	13.0	5.6	В
	Subtotal	182	178	97.7%	39.6	6.0	D
	Left Turn	40	44	110.5%	71.1	21.6	E
CD	Through	15	13	88.7%	52.9	31.8	D
SB	Right Turn	401	391	97.6%	32.3	15.1	С
	Subtotal	456	449	98.4%	37.5	14.7	D
EB	Left Turn	417	391	93.7%	60.8	7.6	Е
	Through	981	871	88.8%	0.5	0.2	Α
LD	Right Turn	67	61	91.5%	2.7	0.3	Α
	Subtotal	1,465	1,323	90.3%	17.4	1.7	В
	Left Turn	30	30	100.3%	89.1	29.2	F
WB	Through	651	647	99.4%	49.6	20.3	D
	Right Turn	35	32	92.0%	28.5	20.4	С
	Subtotal	716	710	99.1%	50.3	19.8	D
	Total	2,819	2,659	94.3%	31.5	5.6	С

Lincoln 40 EIR Cumulative Plus Project AM Peak Hour

Intersection 5 I-80 WB Ramps/Richards Blvd Uncontrolled

		Storage		Average Queue (ft)					Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
5	Through	200	43	3	38	48	90	5	83	96	NO
	Right Turn	1,120	43	3	38	48	90	5	83	96	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn										
SB	Through	1,280	0	0	0	0	102	18	83	131	NO
	Right Turn	1,800	0	0	0	0	27	17	0	66	NO
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
LD	Through										
	Right Turn	560	0	0	0	0	28	11	22	51	NO
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn										
	Through										
	Right Turn	1,500	588	209	297	878	1,549	162	1,119	1,638	MAX
	Second Right										

Lincoln 40 EIR
Cumulative Plus Project
AM Peak Hour

Intersection 6 I-80 EB Ramps/Richards Blvd Signal

		Storage		Average Queue (ft)					Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
	Through	500	497	80	402	610	808	5	803	815	MAX
	Right Turn	500	470	79	376	581	778	5	774	786	MAX
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn	360	31	4	26	38	133	18	112	163	NO
36	Through	1,300	17	1	16	19	145	22	118	181	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
ED	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn	160	880	168	611	1,215	1,678	17	1,658	1,695	AVG
VVD	Through										
	Right Turn	1,260	941	128	800	1,205	1,672	15	1,658	1,695	MAX
	Second Right										

Lincoln 40 EIR Cumulative Plus Project PM Peak Hour

Intersection 5 Richards Blvd/I-80 WB Ramps Uncontrolled

		Storage	Average Queue (ft)		Maximum Queue (ft)				Exceeds		
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
IND	Through	200	28	5	19	33	90	9	70	96	NO
	Right Turn	1,120	28	5	19	33	90	9	70	96	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn										
SB	Through	1,280	1	0	1	2	130	22	99	167	NO
	Right Turn	1,800	0	0	0	0	0	0	0	0	NO
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
LD	Through										
	Right Turn	560	0	0	0	0	4	9	0	23	NO
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn										
	Through										
	Right Turn	1,500	0	0	0	0	0	0	0	0	NO
	Second Right										

Lincoln 40 EIR
Cumulative Plus Project
PM Peak Hour

Intersection 6 I-80 EB Ramps/Richards Blvd Signal

		Storage		Average Queue (ft)					Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
115	Through	500	428	88	245	525	797	37	695	833	MAX
	Right Turn	500	400	88	218	497	767	37	666	804	MAX
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn	360	44	4	37	53	149	15	129	178	NO
36	Through	1,300	46	7	37	58	261	30	204	305	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
EB	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn	160	1,340	47	1,271	1,403	1,679	12	1,658	1,695	AVG
VVD	Through										
	Right Turn	1,260	243	340	9	816	789	759	91	1,686	NO
	Second Right										

Lincoln 40 EIR
Cumulative Plus Project (Mitigated)
AM Peak Hour

Intersection 5 I-80 WB Ramps/Richards Blvd

Uncontrolled

		Storage		Average Queue (ft)			Maximum	Queue (ft)		Exceeds	
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
NB	U Turn Second Left Left Turn										
	Through Right Turn Second Right	200 1,120	20 20	12 12	4 4	40 40	80 80	14 14	59 59	96 96	NO NO
SB	U Turn Second Left Left Turn Through Right Turn Second Right	1,280 1,800	0	0 0	0	1 0	111 25	11 14	98 0	136 50	NO NO
ЕВ	U Turn Second Left Left Turn Through Right Turn Second Right	560	0	0	0	0	31	14	20	54	NO
WB	U Turn Second Left Left Turn Through Right Turn Second Right	1,500	54	100	0	263	300	407	0	1,192	NO

Lincoln 40 EIR
Cumulative Plus Project (Mitigated)
AM Peak Hour

Intersection 6

I-80 EB Ramps/Richards Blvd

Signal

		Storage	Average Queue (ft)			Maximum Queue (ft)				Exceeds	
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn Second Left Left Turn										
NB	Through Right Turn Second Right	500 500	133 112	96 93	56 38	351 324	527 497	228 228	292 262	798 769	MAX NO
SB	U Turn Second Left Left Turn Through Right Turn Second Right	360 1,300	30 17	2 1	25 15	34 19	128 145	18 23	113 114	159 178	NO NO
EB	U Turn Second Left Left Turn Through Right Turn Second Right										
WB	U Turn Second Left Left Turn Through Right Turn Second Right	160 1,260	215 157	147 224	83 10	489 630	1,163 798	395 691	607 120	1,668 1,687	AVG NO

Lincoln 40 EIR
Cumulative Plus Project (Mitigated)
PM Peak Hour

Intersection 5

Richards Blvd/I-80 WB Ramps

Uncontrolled

		Storage		Average Queue (ft)			Maximum	Queue (ft)		Exceeds	
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
NB	U Turn Second Left Left Turn	200	_	4	2	7	74	40	F0	0.7	No
	Through Right Turn Second Right	200 1,120	5 5	1 1	3	7 7	71 71	10 10	59 59	87 87	NO NO
SB	U Turn Second Left Left Turn Through Right Turn Second Right	1,280 1,800	1 0	0	0 0	1 0	125 0	23 0	83 0	146 0	NO NO
EB	U Turn Second Left Left Turn Through Right Turn Second Right	560	0	0	0	0	2	8	0	25	NO
WB	U Turn Second Left Left Turn Through Right Turn Second Right	1,500	0	0	0	0	0	0	0	0	NO

Lincoln 40 EIR
Cumulative Plus Project (Mitigated)
PM Peak Hour

Intersection 6

I-80 EB Ramps/Richards Blvd

Signal

		Storage		Average Queue (ft)		Maximum Queue (ft)				Exceeds	
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
NB	U Turn Second Left Left Turn										
	Through Right Turn Second Right	500 500	136 113	20 20	105 82	176 152	531 501	40 40	467 437	615 585	MAX MAX
SB	U Turn Second Left Left Turn Through Right Turn Second Right	360 1,300	50 45	4 4	42 40	55 54	177 251	31 24	129 219	239 292	NO NO
EB	U Turn Second Left Left Turn Through Right Turn Second Right										
WB	U Turn Second Left Left Turn Through Right Turn Second Right	160 1,260	1,282 7	53 1	1,158 5	1,323 10	1,685 115	12 19	1,658 92	1,695 142	AVG NO

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Old Davis Rd to Cumulative Plu AM Peak Hour	o Richards Blv us Project	vd			
			- 1 0 15 1 1			
		Flow Inputs ai	nd Adjustments			
Volume, V				5,743	vph	
Peak-hour factor, PHF				0.92		
Peak 15-min volume, v_{15}				1,561	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length					mi	
Trucks and buses PCE, E_T				1.5		
Recreational vehicle PCE, E	•			1.2		
Heavy vehicle adjustment, f	***			0.958		
Driver popoulation factor, f	Р			1.00		
Flow rate, v _p				6,517	pcph	
Number of lanes, N				3		
	S	speed Inputs a	nd Adjustments	;		
			•			
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				7.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmer	nt, f _{LC}			0.0	mph	
TRD adjustment				16.5	mph	
Calculated free-flow speed,	FFS			58.9	mph	
Measured free-flow speed,	FFS				mph	
Free-flow speed curve				65	mph	
	Capaci	ty Checks for	Segments with F	Ramps		
	Actual		Maximum		Violation?	
Entering freeway volume	. 100001	pcph		pcph	11310013111	
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
- p		In others		I. s.le.		
-	LC	OS and Perfor	mance Measure	S		
Flow rate, v _p				2,172	pcphpl	
Average passenger-car spee	ed. S			56.5	mph	
Volume-to-capacity ratio, v				0.92		
Density, D	. •			38.4	pcpmpl	
Level of service, LOS				E	Poblitibi	
20101 01 301 1100, 203				_		

		Jusic Operati	ional Analysis			
Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Richards Blvd to Cumulative Plus AM Peak Hour					
	Flo	ow Inputs an	ıd Adjustments	i		
Volume V				F 120	, un h	
Volume, V Peak-hour factor, PHF				5,129 0.92	vph	
Peak 15-min volume, v ₁₅				1,394	veh	
Trucks and buses				8.8%	Ven	
Recreational vehicles				0.0%		
Terrain type				Level		
Grade				LCVCI		
Length					mi	
Trucks and buses PCE, E _T				1.5		
Recreational vehicle PCE, E	·			1.2		
Heavy vehicle adjustment, f				0.958		
Driver popoulation factor, f				1.00		
Flow rate, v _p	•			5,820	pcph	
Number of lanes, N				3		
	Spe	eed Inputs a	nd Adjustment	S		
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				7.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmen	nt, f _{ic}			0.0	mph	
TRD adjustment				16.5	mph	
Calculated free-flow speed,	FFS			58.9	mph	
Measured free-flow speed,	FFS				mph	
Free-flow speed curve				65	mph	
	Capacity	Checks for S	Segments with	Ramps		
	<u>Actual</u>		<u>Maximum</u>		Violation?	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
	LOS	and Perforn	nance Measure	es		
Flow rate, v _p				1,940	pcphpl	
Average passenger-car spec	ed, S			60.9	mph	
Volume-to-capacity ratio, v				0.83	r	
Density, D				31.9	pcpmpl	
Level of service, LOS				D		

Project Freeway Segment Alternative	Lincoln 40 EIR Westbound I-80 Mace Blvd to Olive Drive Cumulative Plus Project				
Time period	AM Peak Hour				
	Flow Inputs a	nd Adjustments			
Volume, V			6,030	vph	
Peak-hour factor, PHF			0,030	νριι	
Peak 15-min volume, v ₁₅			1,570	veh	
Trucks and buses			8.8%	Ven	
Recreational vehicles			0.0%		
Terrain type			Level		
Grade					
Length				mi	
Trucks and buses PCE, E _T			1.5		
Recreational vehicle PCE, E	R		1.2		
Heavy vehicle adjustment,	•		0.958		
Driver popoulation factor, f			1.00		
Flow rate, v _p			6,558	pcph	
Number of lanes, N			3		
	Speed Inputs a	nd Adjustments	5		
Lane width			12.0	ft	
Right-side lateral clearance			>6	ft	
Total ramp density, TRD			10.00	ramps/mi	
Lane width adjustment, f _{LW}			0.0	mph	
Lateral clearance adjustme	nt, f _{LC}		0.0	mph	
TRD adjustment			22.3	mph	
Calculated free-flow speed,	FFS		53.1	mph	
Measured free-flow speed,	FFS			mph	
Free-flow speed curve			65	mph	
	Canacity Chacks for	Cogmonts with I	Damns		
	Capacity Checks for	ocginents with	ιαπρο		
	<u>Actual</u>	<u>Maximum</u>		Violation?	
Entering freeway volume	pcph		pcph		
Exiting freeway volume	pcph		pcph		
On-ramp volume	pcph		pcph		
Off-ramp volume	pcph		pcph		
	LOS and Perfor	mance Measure	es		
51					
Flow rate, v _p	1.6		2,186	pcphpl	
Average passenger-car spec			56.2	mph	
Volume-to-capacity ratio, v	/c		0.93		
Density, D			38.9	pcpmpl	
Level of service, LOS			E		

Project Freeway Lincoln 40 EIR Freeway Westbound I-80 Segment Olive Dr to Richards Blvd Alternative Cumulative Plus Project Time period AM Peak Hour Flow Inputs and Adjustments Flow Inputs and Adjustments Volume, V Peak 15-min volume, v₁s 1,528 veh Trucks and buses 8.8% sec Recreational vehicles 0.0% sec Terrain type Level mi Grade Level mi Length mi 1.2 Trucks and buses PCE, E₁ 1.5 mi Recreational vehicle PCE, E₂ 1.2 mi Heavy wehicle adjustment, f₁₀ 0.958 pcph Driver popoulation factor, f₂ 1.00 pcph Flow rate, y₂ 6.383 pcph Number of lanes, N 3 3 Lane width adjustment, f₁₀ 10.00 ramps/mi Lane width adjustment, f₁₀ 0.0 mph TR		Busic Operat	ional Analysis			
Volume, V S,869 vph	Freeway Segment Alternative	Westbound I-80 Olive Dr to Richards Blvd Cumulative Plus Project				
Peak - Hour factor, PHF 0.96 Peak 15-min volume, v15 1,528 veh Trucks and buses 8.8% Recreational vehicles 0.0% Terrain type Level Image: Comparison of the part of the pa		Flow Inputs ar	nd Adjustments			
Peak - Hour factor, PHF 0.96 Peak 15-min volume, v15 1,528 veh Trucks and buses 8.8% Recreational vehicles 0.0% Terrain type Level Image: Comparison of the part of the pa						
Peak 15-min volume, v₁₅ Trucks and buses 8.8% Recreational vehicles 0.0% Terrain type Level Grade Length mi Length mi Trucks and buses PCE, E₁ and Length 1.5 Recreational vehicle PCE, E₂ and Length 1.2 Heavy vehicle adjustment, f₁ӎ 0.958 Driver popoulation factor, f₂ 1.00 Flow rate, v₂ 6,383 pcph Number of lanes, N 3 Speed Inputs and Adjustments Speed Inputs and Adjustments **Total ramp density, TRD 10.00 **Total ramp density, Troal r	Volume, V			5,869	vph	
Trucks and buses Recreational vehicles Carde Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Heavy vehicle adjustment, f _{INV} Driver popoulation factor, f _P Flow rate, v _p Number of lanes, N Speed Inputs and Adjustments Speed Inputs and Adjustments Speed Inputs and Adjustments Lane width Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{ILC} 10.0 mph Lateral clearance adjustment, f _{ILC} 10.0 mph Lateral clearance adjustment, f _{ILC} 10.0 mph Calculated free-flow speed, FFS Measured free-flow speed, FFS Free-flow speed curve Actual Maximum Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ra	Peak-hour factor, PHF			0.96		
Recreational vehicles Grade Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Heavy vehicle adjustment, f _{I₁V} Driver popoulation factor, f _P Number of lanes, N Speed Inputs and Adjustments Lane width	Peak 15-min volume, v ₁₅			1,528	veh	
Terrain type Grade Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Heavy vehicle adjustment, f _{th} Driver popoulation factor, f _p Flow rate, v _p Number of lanes, N Speed Inputs and Adjustments Speed Inputs and Adjustments Speed Inputs and Adjustments Lane width Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{tw} 0.0 mph Lateral clearance adjustment, f _{tw} 0.0 mph Lateral clearance adjustment, f _{tw} 12.0 ft Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{tw} 0.0 mph Lateral clearance adjustment, f _{tw} 12.0 ft Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{tw} 0.0 mph Lateral clearance adjustment, f _{tw} 0.0 mph Calculated Inter-flow speed, FFS Signature Signature Calculated free-flow speed, FFS mph Measured free-flow speed, FFS mph Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps LOS and Performance Measures Flow rate, v _p Average passenger-car speed, S Volume-to-capacity ratio, v/c Density, D Density, D 37.0 pcpmpl	Trucks and buses			8.8%		
Grade Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Recreational vehicle	Recreational vehicles			0.0%		
Length Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Heavy vehicle adjustment, f _{Inv} O.958 Driver popoulation factor, f _P Flow rate, v _p Number of lanes, N Speed Inputs and Adjustments Speed Inputs and Adjustments Speed Inputs and Adjustments 12.0	Terrain type			Level		
Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Recreational vehicle PCE, E _R Heavy vehicle adjustment, f _{HV} Diver popoulation factor, f _P Flow rate, v _p Number of lanes, N Speed Inputs and Adjustments 1.00	Grade					
Trucks and buses PCE, E _T Recreational vehicle PCE, E _R Recreational vehicle PCE, E _R Heavy vehicle adjustment, f _{HV} Diver popoulation factor, f _P Flow rate, v _p Number of lanes, N Speed Inputs and Adjustments 1.00	Length				mi	
Heavy vehicle adjustment, f _{HV} 0.958 Driver popoulation factor, f _P 1.00 Flow rate, v _p 6,383 pcph Number of lanes, N 3 Speed Inputs and Adjustments Lane width Right-side lateral clearance				1.5		
Heavy vehicle adjustment, firty Driver popoulation factor, fp Flow rate, vp Flow rate, vp Number of lanes, N Speed Inputs and Adjustments Speed Inputs and Adjustments 12.0 ft Right-side lateral clearance Total ramp density, TRD Lane width adjustment, fity Lane width adjustments **County Checks** **County Checks** **Capacity Checks** **Capacit	Recreational vehicle PCE, E _R			1.2		
Driver popoulation factor, f _p Flow rate, v _p Number of lanes, N Speed Inputs and Adjustments 12.0	Heavy vehicle adjustment, f	HV		0.958		
Flow rate, v _p Number of lanes, N Speed Inputs and Adjustments Lane width Lane width Right-side lateral clearance Flow gently, TRD Lane width adjustment, f _{LW} Lateral clearance adjustment, f _{LC} O.0 mph TRD adjustment Calculated free-flow speed, FFS S3.1 mph Measured free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Los and Performance Measures Flow rate, v _p Los and Performance Measures Flow rate, v _p Average passenger-car speed, S Volume-to-capacity ratio, v/c Density, D Speed Inputs and Adjustments 12.0 ft Maximum Violation? Violation? Violation? Flow rate, v _p Average passenger-car speed, S For.5 mph On-ramp volume Pcph Pcph Pcph Pcph Pcph Pcph Pcph Pcph				1.00		
Speed Inputs and Adjustments 12.0 ft				6,383	pcph	
Lane width 12.0 ft	r.					
Lane width Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Lane width adjustment, f _{LW} Lateral clearance adjustment, f _{LC} TRD adjustment Calculated free-flow speed, FFS Measured free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Los and Performance Measures Flow rate, v _p Average passenger-car speed, S Volume-to-capacity ratio, v/c Density, D Actual Capacity Checks for Segments with Ramps Actual Maximum Violation? Violation? Violation? Flow rate, v _p Actual Depth Pcph Pcph Pcph Pcph Pcph Pcph Pcph Pcp	,					
Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Lane width adjustment, f _{LC} Total ramp density, TRD Lane width adjustment, f _{LW} Lateral clearance adjustment, f _{LC} TRD adjustment Calculated free-flow speed, FFS Measured free-flow speed, FFS Measured free-flow speed, FFS Measured free-flow speed curve Capacity Checks for Segments with Ramps Los and Performance Measures Flow rate, v _p LOS and Performance Measures Flow rate, v _p Average passenger-car speed, S Volume-to-capacity ratio, v/c Density, D Flow poph Done on the poph Done		Speed Inputs a	nd Adjustments	s		
Right-side lateral clearance Total ramp density, TRD Lane width adjustment, f _{LW} Lane width adjustment, f _{LC} Total ramp density, TRD Lane width adjustment, f _{LW} Lateral clearance adjustment, f _{LC} TRD adjustment Calculated free-flow speed, FFS Measured free-flow speed, FFS Measured free-flow speed, FFS Measured free-flow speed curve Capacity Checks for Segments with Ramps Los and Performance Measures Flow rate, v _p LOS and Performance Measures Flow rate, v _p Average passenger-car speed, S Volume-to-capacity ratio, v/c Density, D Flow poph Done on the poph Done	Lana and deb			42.0	۲.	
Total ramp density, TRD Lane width adjustment, f _{LW} Lateral clearance adjustment, f _{LC} TRD adjustment Calculated free-flow speed, FFS Measured free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Los and Paper Segments with Ramps Violation? Entering freeway volume pcph pcph pcph pcph pcph pcph pcph pc						
Lane width adjustment, f _{LW} Lateral clearance adjustment, f _{LC} TRD adjustment Calculated free-flow speed, FFS Measured free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Los and Perhomance Weather Depth pcph pcph pcph pcph pcph pcph pcph p	=					
Lateral clearance adjustment, f _{LC} TRD adjustment Calculated free-flow speed, FFS Sa.1 mph Measured free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Violation? Entering freeway volume pcph pcph pcph On-ramp volume pcph pcph pcph Off-ramp volume pcph pcph pcph Deff-ramp volume pcph pcph pcph pcph Capacity Checks for Segments with Ramps Violation? Entering freeway volume pcph pcph pcph pcph pcph pcph pcph pcp						
TRD adjustment Calculated free-flow speed, FFS Measured free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Violation? Entering freeway volume pcph pcph pcph pcph pcph pcph pcph pcp						
Calculated free-flow speed, FFS Measured free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Maximum Pcph Pcph Pcph Pcph On-ramp volume Pcph Pcph Pcph Pcph Pcph Pcph Pcph Pcph		it, f _{LC}				
Measured free-flow speed, FFS Free-flow speed curve Capacity Checks for Segments with Ramps Capacity Checks for Segments with Ramps Actual Maximum Violation? Entering freeway volume pcph pcph Exiting freeway volume pcph pcph On-ramp volume pcph pcph Off-ramp volume pcph pcph Off-ramp volume pcph pcph LOS and Performance Measures Flow rate, v _p Average passenger-car speed, S Volume-to-capacity ratio, v/c Density, D Actual Maximum Violation? Violation? Violation? Violation? Exiting freeway volume pcph pcph pcph pcph pcph pcph pcph pcp						
Free-flow speed curve Capacity Checks for Segments with Ramps Actual Maximum Violation? Entering freeway volume pcph pcph pcph Exiting freeway volume pcph pcph On-ramp volume pcph pcph Off-ramp volume pcph pcph Off-ramp volume pcph pcph Off-ramp volume pch pcph Off-ramp volume pch pcph pcph Off-ramp volume pch pch pcph Off-ramp volume pch pcph pcph pcph Off-ramp volume pch pcph pcph pcph pcph pcph pcph pcph				53.1		
Capacity Checks for Segments with Ramps Actual Maximum Violation?		FFS				
Actual Maximum Violation? Entering freeway volume pcph pcph Exiting freeway volume pcph pcph On-ramp volume pcph pcph Off-ramp volume pcph pcph Off-ramp volume pcph pcph Off-ramp volume pcph pcph Domait, vp Average passenger-car speed, S Volume-to-capacity ratio, v/c Density, D Actual Maximum Violation? Density D Aximum Violation? Pcph Pcph Pcph Pcph Pcph Pcph Pcph Pcp	Free-flow speed curve			65	mph	
Actual Maximum Violation? Entering freeway volume pcph pcph Exiting freeway volume pcph pcph On-ramp volume pcph pcph Off-ramp volume pcph pcph Off-ramp volume pcph pcph Off-ramp volume pcph pcph Domait, vp Average passenger-car speed, S Volume-to-capacity ratio, v/c Density, D Actual Maximum Violation? Density D Aximum Violation? Pcph Pcph Pcph Pcph Pcph Pcph Pcph Pcp		Capacity Checks for S	Segments with I	Ramps		
Entering freeway volume pcph pcph pcph pcph pcph pcph pcph pcp						
Exiting freeway volume pcph pcph pcph pcph pcph pcph pcph pcp		<u>Actual</u>	<u>Maximum</u>		Violation?	
On-ramp volume pcph pcph pcph Off-ramp volume pcph pcph LOS and Performance Measures Flow rate, v _p 2,128 pcphpl Average passenger-car speed, S Volume-to-capacity ratio, v/c 0.91 Density, D 37.0 pcpmpl	Entering freeway volume	pcph		pcph		
Off-ramp volume pcph pcph LOS and Performance Measures Flow rate, v _p 2,128 pcphpl Average passenger-car speed, S Volume-to-capacity ratio, v/c 0.91 Density, D 37.0 pcpmpl	Exiting freeway volume	pcph		pcph		
Coff-ramp volume pcph pcph LOS and Performance Measures Flow rate, v _p Average passenger-car speed, S Volume-to-capacity ratio, v/c Density, D Density, D	On-ramp volume	pcph		pcph		
Flow rate, v _p Average passenger-car speed, S Volume-to-capacity ratio, v/c Density, D 2,128 pcphpl mph 0.91 37.0 pcpmpl	Off-ramp volume	pcph				
Flow rate, v _p Average passenger-car speed, S Volume-to-capacity ratio, v/c Density, D 2,128 pcphpl mph 0.91 37.0 pcpmpl		LOS and Dorfor	manco Moacuro			
Average passenger-car speed, S 57.5 mph Volume-to-capacity ratio, v/c 0.91 Density, D 37.0 pcpmpl		LOS and Perfort	nance wiedsure	:>		
Average passenger-car speed, S 57.5 mph Volume-to-capacity ratio, v/c 0.91 Density, D 37.0 pcpmpl	Flow rate. v.			2.128	pcphpl	
Volume-to-capacity ratio, v/c 0.91 Density, D 37.0 pcpmpl	· ·	d. S				
Density, D 37.0 pcpmpl					p.	
		•			ncnmnl	
	-				Popilibi	

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-80 Richards Blvd to Cumulative Plus AM Peak Hour	Old Davis R	d								
	Flow Inputs and Adjustments										
Volume, V				5,994	vph						
Peak-hour factor, PHF				0.96							
Peak 15-min volume, v ₁₅				1,561	veh						
Trucks and buses				8.8%							
Recreational vehicles				0.0%							
Terrain type				Level							
Grade											
Length					mi						
Trucks and buses PCE, E_T				1.5							
Recreational vehicle PCE, E	?			1.2							
Heavy vehicle adjustment, f	•			0.958							
Driver popoulation factor, f				1.00							
Flow rate, v _p	•			6,518	pcph						
Number of lanes, N				4							
,											
	Sp	eed Inputs a	nd Adjustments								
Lane width				12.0	ft						
				>6	ft						
Right-side lateral clearance											
Total ramp density, TRD				10.00	ramps/mi						
Lane width adjustment, f _{LW}	-			0.0	mph						
Lateral clearance adjustmen	it, T _{LC}			0.0	mph						
TRD adjustment				22.3	mph						
Calculated free-flow speed,				53.1	mph						
Measured free-flow speed,	FFS				mph						
Free-flow speed curve				65	mph						
	Capacity	Checks for	Segments with R	amps							
-				· ·	, , , , , , , , , , , , , , , , , , ,						
	<u>Actual</u>		<u>Maximum</u>		<u>Violation?</u>						
Entering freeway volume		pcph		pcph							
Exiting freeway volume		pcph		pcph							
On-ramp volume		pcph		pcph							
Off-ramp volume		pcph		pcph							
	LOS	S and Perfor	mance Measures								
Flavorate v				1.630	mand I						
Flow rate, v _p	.1.6			1,630	pcphpl						
Average passenger-car spec				64.3	mph						
Volume-to-capacity ratio, v	/C			0.69							
Density, D				25.4	pcpmpl						
Level of service, LOS				С							

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Old Davis Rd to Cumulative Plu PM Peak Hour	o Richards Blv us Project	⁄d							
Flow Inputs and Adjustments										
		· ·								
Volume, V				5,793	vph					
Peak-hour factor, PHF				0.92						
Peak 15-min volume, v ₁₅				1,574	veh					
Trucks and buses				8.8%						
Recreational vehicles				0.0%						
Terrain type				Level						
Grade										
Length					mi					
Trucks and buses PCE, E_T				1.5						
Recreational vehicle PCE, E _F				1.2						
Heavy vehicle adjustment, f				0.958						
Driver popoulation factor, f	P			1.00						
Flow rate, v _p				6,574	pcph					
Number of lanes, N				3						
	S	speed Inputs a	nd Adjustments	S						
Lane width				12.0	ft					
Right-side lateral clearance				>6	ft					
Total ramp density, TRD				7.00	ramps/mi					
Lane width adjustment, f _{LW}				0.0	mph					
Lateral clearance adjustmer	nt, f _{LC}			0.0	mph					
TRD adjustment				16.5	mph					
Calculated free-flow speed,	FFS			58.9	mph					
Measured free-flow speed,	FFS				mph					
Free-flow speed curve				65	mph					
	Capaci	ty Checks for S	Segments with I	Ramps						
	Actual		Maximum		Violation?					
Entering freeway volume		pcph		pcph						
Exiting freeway volume		pcph		pcph						
On-ramp volume		pcph		pcph						
Off-ramp volume		pcph		pcph						
		p open		p-p						
	LC	OS and Perfor	mance Measure	S						
Flow rate, v _p				2,191	pcphpl					
Average passenger-car spee	ed. S			56.1	mph					
Volume-to-capacity ratio, v				0.93						
Density, D	. •			39.0	pcpmpl					
Level of service, LOS				55.0 E	Poblith					
20101 01 301 1100, 203				_						

	240.0 0 pc. 40	ional Analysis			
Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Richards Blvd to Mace Blvd Cumulative Plus Project PM Peak Hour				
	Flow Inputs ar	nd Adjustments			
Volume, V			5,197	vph	
Peak-hour factor, PHF			0.92		
Peak 15-min volume, v ₁₅			1,412	veh	
Trucks and buses			8.8%		
Recreational vehicles			0.0%		
Terrain type			Level		
Grade					
Length				mi	
Trucks and buses PCE, E_T			1.5		
Recreational vehicle PCE, E _R			1.2		
Heavy vehicle adjustment, f	HV		0.958		
Driver popoulation factor, f			1.00		
Flow rate, v _p			5,897	pcph	
Number of lanes, N			3		
	Speed Inputs a	nd Adjustment	S		
Lane width			12.0	ft	
			>6	ft	
Right-side lateral clearance					
Total ramp density, TRD			7.00	ramps/mi	
Lane width adjustment, f _{LW}	.+ f		0.0	mph	
Lateral clearance adjustmer	it, i _{LC}		0.0	mph	
TRD adjustment			16.5	mph	
Calculated free-flow speed,			58.9	mph	
Measured free-flow speed,	FF5		65	mph	
Free-flow speed curve			65	mph	
	Capacity Checks for S	Segments with	Ramps		
	<u>Actual</u>	<u>Maximum</u>		Violation?	
Entering freeway volume	pcph		pcph		
Exiting freeway volume	pcph		pcph		
On-ramp volume	pcph		pcph		
Off-ramp volume	pcph		pcph		
	LOS and Perforr	nance Measure	es		
Flow rate, v _p			1,966	pcphpl	
Average passenger-car spee	d, S		60.5	mph	
Volume-to-capacity ratio, v,	′ c		0.84		
Density, D			32.5	pcpmpl	
Level of service, LOS			D		

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-80 Mace Blvd to Olive Drive Cumulative Plus Project PM Peak Hour										
Flow Inputs and Adjustments											
Volume, V			5,502	vph							
Peak-hour factor, PHF			0.95								
Peak 15-min volume, v ₁₅			1,448	veh							
Trucks and buses			8.8%								
Recreational vehicles			0.0%								
Terrain type			Level								
Grade											
Length				mi							
Trucks and buses PCE, E_T			1.5								
Recreational vehicle PCE, E	R		1.2								
Heavy vehicle adjustment,	f_{HV}		0.958								
Driver popoulation factor, f	: P		1.00								
Flow rate, v _p			6,046	pcph							
Number of lanes, N			3								
	Speed Inputs a	nd Adjustments	5								
	' '	,									
Lane width			12.0	ft							
Right-side lateral clearance			>6	ft							
Total ramp density, TRD			10.00	ramps/mi							
Lane width adjustment, f _{LW}			0.0	mph							
Lateral clearance adjustme	nt, f _{LC}		0.0	mph							
TRD adjustment			22.3	mph							
Calculated free-flow speed,	FFS		53.1	mph							
Measured free-flow speed,	FFS			mph							
Free-flow speed curve			65	mph							
	Capacity Checks for	Segments with I	Ramps								
	Actual	Maximum		Violation?							
Entering freeway volume	pcph		pcph								
Exiting freeway volume	pcph		pcph								
On-ramp volume	pcph		pcph								
Off-ramp volume	pcph		pcph								
•			• •								
-	LOS and Perfor	mance Measure	es .								
Flow rate, v _p			2,015	pcphpl							
Average passenger-car spec	ed. S		59.6	mph							
Volume-to-capacity ratio, v			0.86	p.							
Density, D	· ~		33.8	pcpmpl							
Level of service, LOS			D	L-6111h1							
2070, 01 30, 1100, 203											

Project Freeway Segment Alternative	Lincoln 40 EIR Westbound I-80 Olive Dr to Richards Blvd Cumulative Plus Project										
Time period	PM Peak Hour										
Flow Inputs and Adjustments											
Volume, V			5,341	vph							
Peak-hour factor, PHF			0.95								
Peak 15-min volume, v ₁₅			1,406	veh							
Trucks and buses			8.8%								
Recreational vehicles			0.0%								
Terrain type			Level								
Grade											
Length				mi							
Trucks and buses PCE, E_T			1.5								
Recreational vehicle PCE, E	₹		1.2								
Heavy vehicle adjustment,	HV		0.958								
Driver popoulation factor, f	P		1.00								
Flow rate, v _p			5,869	pcph							
Number of lanes, N			3								
	Speed Inputs a	nd Adjustments	s								
-	Specapats a	a / lajastiet									
Lane width			12.0	ft							
Right-side lateral clearance			>6	ft							
Total ramp density, TRD			10.00	ramps/mi							
Lane width adjustment, f _{LW}			0.0	mph							
Lateral clearance adjustmen	nt, f _{LC}		0.0	mph							
TRD adjustment			22.3	mph							
Calculated free-flow speed,	FFS		53.1	mph							
Measured free-flow speed,	FFS			mph							
Free-flow speed curve			65	mph							
	Capacity Checks for S	Segments with I	Ramps								
	Actual	<u>Maximum</u>		Violation?							
Entering freeway volume	pcph		pcph								
Exiting freeway volume	pcph		pcph								
On-ramp volume	pcph		pcph								
Off-ramp volume	pcph		pcph								
•											
	LOS and Perfor	mance Measure	es								
Flow rate, v _p			1,956	pcphpl							
Average passenger-car spec	ed S		60.6	mph							
Volume-to-capacity ratio, v			0.83	mpn							
Density, D	, -		32.3	pcpmpl							
Level of service, LOS			D	bekiiibi							
Level of Scivice, LOS			D								

Project Freeway	Lincoln 40 EIR Westbound I-80										
Segment	Richards Blvd to Old Da										
Alternative	Cumulative Plus Project	CT .									
Time period	PM Peak Hour										
Flow Inputs and Adjustments											
Volume, V			6,120	vph							
Peak-hour factor, PHF			0.95	·							
Peak 15-min volume, v ₁₅			1,611	veh							
Trucks and buses			8.8%								
Recreational vehicles			0.0%								
Terrain type			Level								
Grade											
Length				mi							
Trucks and buses PCE, E_T			1.5								
Recreational vehicle PCE, E	1		1.2								
Heavy vehicle adjustment, f	: HV		0.958								
Driver popoulation factor, f	P		1.00								
Flow rate, v _p			6,726	pcph							
Number of lanes, N			4								
	Spood In	outs and Adjustments									
-	эреей пі	outs and Aujustinents									
Lane width			12.0	ft							
Right-side lateral clearance			>6	ft							
Total ramp density, TRD			10.00	ramps/mi							
Lane width adjustment, f_{LW}			0.0	mph							
Lateral clearance adjustmer	nt, f _{LC}		0.0	mph							
TRD adjustment			22.3	mph							
Calculated free-flow speed,	FFS		53.1	mph							
Measured free-flow speed,	FFS			mph							
Free-flow speed curve			65	mph							
	Capacity Check	s for Segments with R	amps								
	<u>Actual</u>	Maximum		Violation?							
Entering freeway volume	рср		pcph								
Exiting freeway volume	рср		pcph								
On-ramp volume	рср		pcph								
Off-ramp volume	рср		pcph								
	1.1		11-								
	LOS and P	erformance Measures									
Flow rate, v _p			1,681	pcphpl							
Average passenger-car spee	ed, S		63.9	mph							
Volume-to-capacity ratio, v	/c		0.72								
Density, D			26.3	pcpmpl							
Level of service, LOS			D								

Appendix E – CEQA Cumulative No Project

Vissim Post-Processor Average Results from 10 Runs Volume and Delay by Movement Lincoln 40 EIR CEQA Cumulative 1 No Project AM Peak Hour

Intersection 1 D St/1st St Signal

	ĺ	Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	14	12	85.0%	33.7	16.2	С
NB	Through	17	17	99.4%	44.5	8.3	D
IND	Right Turn	31	31	101.3%	13.0	13.7	В
	Subtotal	62	60	97.1%	25.4	8.6	С
	Left Turn	85	83	98.0%	101.7	93.4	F
SB	Through	29	29	99.0%	77.9	63.9	Ε
36	Right Turn	68	65	96.0%	42.1	65.3	D
	Subtotal	182	177	97.4%	77.1	77.6	Е
	Left Turn	28	28	98.9%	66.3	22.3	E
EB	Through	227	236	103.9%	30.0	29.6	С
ED	Right Turn	32	30	95.0%	25.9	20.9	С
	Subtotal	287	294	102.4%	32.2	26.9	С
	Left Turn	33	32	97.6%	51.1	12.1	D
\A/D	Through	481	456	94.7%	4.9	1.4	Α
WB	Right Turn	51	51	99.8%	2.0	0.9	Α
	Subtotal	565	539	95.3%	7.2	1.5	Α
	Total	1,096	1,070	97.6%	25.9	16.9	С

Intersection 2 E St-Richards Blvd/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	524	499	95.2%	20.9	3.9	С
NB	Through	97	90	92.6%	19.8	4.6	В
ND	Right Turn	286	272	95.2%	9.7	2.0	Α
	Subtotal	907	861	94.9%	17.0	3.2	В
	Left Turn	1	1	60.0%	14.1	27.4	В
CD	Through	187	185	99.1%	43.3	10.7	D
36	Right Turn	16	15	91.9%	15.7	10.2	В
SB	Subtotal	204	201	98.4%	41.9	9.8	D
	Left Turn	9	10	105.6%	84.1	70.2	F
EB	Through	76	79	103.3%	120.4	29.4	F
LB	Right Turn	258	265	102.6%	18.2	5.4	В
	Subtotal	343	353	102.8%	42.5	13.1	D
	Left Turn	209	209	100.2%	70.3	20.5	E
WB	Through	25	24	94.4%	56.4	18.1	Ε
WD	Right Turn	4	4	90.0%	9.0	11.7	Α
	Subtotal	238	237	99.4%	68.3	20.3	Е
	Total	1,692	1,651	97.6%	33.3	5.5	С

Fehr & Peers 4/1/2017

Olive Dr/Olive Dr Off-Ramp

Side-street Stop

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
IND	Right Turn						
	Subtotal						
	Left Turn						
SB	Through						
36	Right Turn						
	Subtotal						
	Left Turn						
EB	Through						
EB	Right Turn						
	Subtotal						
	Left Turn						
WB	Through	163	161	98.5%	0.5	0.0	Α
VVD	Right Turn						
	Subtotal	163	161	98.5%	0.5	0.0	А
	Total	163	161	98.5%	0.5	0.0	Α

Intersection 4

Olive Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	619	593	95.7%	43.4	3.3	D
NB	Through	704	668	94.9%	20.8	4.3	С
ND	Right Turn	40	41	103.0%	1.5	1.1	Α
	Subtotal	1,363	1,302	95.5%	30.3	3.3	С
	Left Turn	54	52	95.9%	59.9	8.8	E
SB	Through	541	557	102.9%	22.5	2.4	С
36	Right Turn	59	57	96.8%	15.2	4.6	В
	Subtotal	654	665	101.7%	24.7	2.6	С
	Left Turn	49	47	96.5%	57.5	16.4	E
EB	Through	21	19	91.0%	35.7	19.3	D
LD	Right Turn	182	183	100.6%	5.7	1.0	Α
	Subtotal	252	250	95.5% 30.3 3.3 95.9% 59.9 8.8 102.9% 22.5 2.4 96.8% 15.2 4.6 101.7% 24.7 2.6 96.5% 57.5 16.4 91.0% 35.7 19.3	В		
	Left Turn	118	101	85.8%	55.5	2.2	E
WB	Through	45	41	90.4%	46.6	11.8	D
WB	Right Turn	154	150	97.7%	29.9	6.7	С
	Subtotal	317	292	92.2%	42.0	4.8	D
	Total	2,586	2,509	97.0%	29.0	1.8	С

Fehr & Peers 4/1/2017

Vissim Post-Processor Average Results from 10 Runs Volume and Delay by Movement Lincoln 40 EIR CEQA Cumulative 1 No Project AM Peak Hour

Intersection 5

I-80 WB Ramps/Richards Blvd

Uncontrolled

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	576	593	103.0%	7.0	1.6	Α
IND	Right Turn	617	618	100.1%	6.5	0.9	Α
	Subtotal	1,193	1,211	101.5%	6.7	1.2	Α
	Left Turn						
SB	Through	666	661	99.2%	0.6	0.1	Α
36	Right Turn	200	198	99.1%	1.1	0.2	Α
	Subtotal	866	859	99.2%	0.7	0.1	Α
	Left Turn						
EB	Through						
LB	Right Turn	206	198	95.9%	25.0	16.3	С
	Subtotal	206	198	95.9%	25.0	16.3	С
	Left Turn						
WB	Through	335	311	92.7%	247.8	65.2	F
VVD	Right Turn	442	404	91.3%	248.9	66.5	F
	Subtotal	777	714	91.9%	248.5	66.0	F
	Total	3,042	2,982	98.0%	63.1	16.5	F

Intersection 6

I-80 EB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	982	981	99.9%	35.2	3.9	D
IND	Right Turn	95	93	98.3%	37.7	6.9	D
	Subtotal	1,077	1,075	99.8%	35.4	4.1	D
	Left Turn	311	308	99.1%	42.7	8.8	D
SB	Through	561	546	97.3%	13.8	1.6	В
36	Right Turn						
	Subtotal	872	854	98.0%	24.6	3.6	С
	Left Turn						_
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn	722	713	98.7%	43.8	18.3	D
WB	Through						
WD	Right Turn	226	230	101.8%	34.5	16.8	С
	Subtotal	948	943	99.4%	41.6	18.1	D
	Total	2,897	2,871	99.1%	34.4	6.2	С

Fehr & Peers 4/1/2017

Lincoln 40 EIR CEQA Cumulative 1 No Project AM Peak Hour

Intersection 7

Research Park Dr/Richards Blvd

Signal

	1	Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	85	83	97.1%	66.9	9.7	E
NB	Through	5	4	88.0%	46.7	33.1	D
IND	Right Turn	40	39	97.3%	6.8	3.8	Α
	Subtotal	130	126	96.8%	46.8	9.1	D
	Left Turn	22	22	99.1%	56.8	16.6	Ε
SB	Through	22	20	91.4%	51.3	15.0	D
36	Right Turn	136	133	98.1%	19.4	5.8	В
	Subtotal	180	175	97.4%	28.6	6.7	С
	Left Turn	418	411	98.3%	46.4	5.7	D
EB	Through	718	714	99.5%	16.2	3.3	В
LB	Right Turn	147	138	94.1%	17.2	3.4	В
	Subtotal	1,283	1,263	98.5%	26.0	3.0	С
WB	Left Turn	38	38	98.9%	102.0	30.8	F
	Through	821	812	98.9%	70.6	19.9	Ε
	Right Turn	23	23	99.6%	42.6	17.5	D
	Subtotal	882	872	98.9%	71.4	18.9	E
	Total	2,475	2,437	98.5%	42.7	6.3	D

Lincoln 40 EIR CEQA Cumulative 1 No Project PM Peak Hour

Intersection 1 D St/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	31	29	91.9%	23.0	8.9	С
	Through	46	47	101.7%	21.6	7.8	С
	Right Turn	64	67	104.1%	25.6	7.6	С
	Subtotal	141	142	100.6%	23.6	5.5	С
•	Left Turn	187	176	93.9%	189.5	46.3	F
SB	Through	41	37	90.7%	176.8	37.6	F
3D	Right Turn	56	52	93.2%	148.6	50.1	F
	Subtotal	284	265	93.3%	180.6	45.9	F
	Left Turn	23	21	93.0%	258.3	80.8	F
EB	Through	378	354	93.6%	235.3	66.6	F
ED	Right Turn	62	55	87.9%	229.9	72.9	F
	Subtotal	463	430	92.8%	235.4	67.4	F
	Left Turn	77	74	96.5%	31.8	7.5	С
WB	Through	372	379	102.0%	13.8	2.7	В
	Right Turn	49	45	91.6%	8.2	3.9	Α
	Subtotal	498	499	100.1%	15.8	2.6	В
	Total	1,386	1,335	96.3%	119.3	16.9	F

Intersection 2 E St-Richards Blvd/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	314	310	98.7%	21.1	3.8	С
NB	Through	185	188	101.5%	21.4	4.8	С
NB	Right Turn	356	354	99.6%	10.6	2.1	В
	Subtotal	855	852	99.7%	16.7	2.9	В
	Left Turn	6	7	113.3%	53.4	46.4	D
SR	Through	190	189	99.5%	85.9	32.4	F
36	Right Turn	27	27	98.5%	50.5	32.2	D
	Subtotal	223	222	99.7%	81.2	32.4	F
	Left Turn	10	9	92.0%	68.3	42.5	E
FR	Through	53	53	99.8%	83.8	13.8	F
EB	Right Turn	566	535	94.5%	30.6	4.8	С
	Subtotal	629	597	94.9%	37.0	4.5	D
	Left Turn	205	199	97.2%	53.3	5.6	D
WB	Through	157	161	102.4%	48.1	10.3	D
	Right Turn	10	9	89.0%	28.3	20.6	С
	Subtotal	372	369	99.1%	50.5	5.2	D
	Total	2,079	2,040	98.1%	36.5	5.0	D

Lincoln 40 EIR
CEQA Cumulative 1 No Project
PM Peak Hour

Intersection 3

Olive Dr/Olive Dr Off-Ramp

Side-street Stop

		Demand	Served Vol	ume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
IND	Right Turn						
	Subtotal						
	Left Turn						
SB	Through						
36	Right Turn						
	Subtotal						
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn						
WB	Through	160	160	99.9%	0.5	0.0	Α
	Right Turn						
	Subtotal	160	160	99.9%	0.5	0.0	Α
	Total	160	160	99.9%	0.5	0.0	Α

Intersection 4

Olive Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	217	214	98.6%	52.2	5.2	D
NB	Through	631	635	100.6%	34.4	4.9	С
ND	Right Turn	58	56	96.9%	1.6	1.0	Α
	Subtotal	906	905	99.9%	36.4	3.5	D
	Left Turn	110	110	99.6%	59.3	12.2	E
SB	Through	789	763	96.8%	36.3	9.1	D
36	Right Turn	62	56	90.3%	30.8	9.7	С
	Subtotal	961	929	96.7%	38.9	9.6	D
	Left Turn	38	38	100.0%	58.7	12.6	E
EB	Through	35	34	96.3%	34.8	11.5	С
LB	Right Turn	455	455	99.9%	17.4	2.4	В
	Subtotal	528	526	99.7%	21.9	2.9	С
	Left Turn	149	131	87.6%	65.7	7.5	Ε
WB	Through	34	31	89.7%	38.9	12.3	D
	Right Turn	186	179	96.1%	28.6	3.9	С
	Subtotal	369	340	92.1%	45.6	6.4	D
	Total	2,764	2,700	97.7%	35.7	3.8	D

Lincoln 40 EIR CEQA Cumulative 1 No Project PM Peak Hour

Intersection 5

I-80 WB Ramps/Richards Blvd

Uncontrolled

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	590	587	99.4%	16.9	4.1	С
IND	Right Turn	776	766	98.8%	11.1	1.5	В
	Subtotal	1,366	1,353	99.0%	13.6	2.3	В
	Left Turn						
SB	Through	1,186	1,147	96.7%	1.5	0.1	Α
36	Right Turn	368	363	98.7%	1.6	0.3	Α
	Subtotal	1,554	1,510	97.2%	1.5	0.1	Α
	Left Turn						
EB	Through						
LD	Right Turn	85	85	99.4%	3.4	0.8	Α
	Subtotal	85	85	99.4%	3.4	0.8	Α
	Left Turn						
WB	Through	68	70	103.4%	36.4	31.4	Ε
	Right Turn	257	258	100.4%	35.5	24.2	E
	Subtotal	325	328	101.0%	35.8	26.0	Е
	Total	3,330	3,276	98.4%	10.1	3.1	В

Intersection 6

I-80 EB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	1,193	1,190	99.7%	50.4	6.5	D
IND	Right Turn	125	125	100.3%	100.4	30.9	F
	Subtotal	1,318	1,315	99.8%	54.9	7.9	D
	Left Turn	465	450	96.7%	67.2	11.3	E
SB	Through	806	782	97.0%	24.6	3.9	С
36	Right Turn						
	Subtotal	1,271	1,231	96.9%	40.6	7.1	D
	Left Turn						
EB	Through						
LD	Right Turn						
	Subtotal						
	Left Turn	800	743	92.9%	157.6	33.2	F
\A/D	Through						
WB	Right Turn	170	162	95.5%	135.7	27.2	F
	Subtotal	970	906	93.4%	153.5	32.3	F
	Total	3,559	3,452	97.0%	74.2	9.7	E

Lincoln 40 EIR CEQA Cumulative 1 No Project PM Peak Hour

Intersection 7

Research Park Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	104	102	97.9%	63.2	9.0	E
NB	Through	25	26	102.0%	24.2	7.9	С
NB	Right Turn	54	55	100.9%	7.1	2.6	Α
	Subtotal	183	182	99.3%	41.9	6.6	D
	Left Turn	40	41	103.3%	116.8	38.4	F
SB	Through	16	15	91.9%	100.0	49.9	F
36	Right Turn	431	427	99.2%	94.7	31.4	F
	Subtotal	487	483	99.3%	96.9	31.5	F
	Left Turn	426	402	94.3%	52.9	9.9	D
EB	Through	1,110	1,056	95.1%	17.2	1.3	В
LB	Right Turn	70	67	95.6%	16.5	4.5	В
	Subtotal	1,606	1,524	94.9%	26.6	3.6	С
WB	Left Turn	29	26	89.3%	86.8	17.1	F
	Through	699	696	99.5%	57.4	9.9	Ε
	Right Turn	39	40	101.5%	26.0	10.9	С
	Subtotal	767	761	99.2%	57.1	9.5	E
	Total	3,043	2,951	97.0%	46.7	6.0	D

CEQA Cumulative 2 No Project Richards Blvd - Olive Dr Circulation No Build - Cumulative Conditions AM Peak Hour

Intersection 4

D St/First St

Signal

		Demand	Served Vo	lume (vph)	Total	Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn	14	13	93.6%	30.5	18.1	С	
ND	Through	17	16	92.9%	33.5	17.9	С	
IND	Right Turn	31	33	107.1%	15.7	21.4	В	
	Subtotal	62	62	100.2%	24.6	15.0	С	
'	Left Turn	85	85	100.2%	83.5	66.5	F	
CD	Through	29	29	99.7%	69.5	68.3	Ε	
36	Right Turn	68	69	100.9%	37.7	49.2	D	
	Subtotal	182	183	100.4%	64.9	61.0	Е	
	Left Turn	28	28	100.7%	61.3	21.3	E	
ED	Through	227	234	102.9%	26.0	16.5	С	
ED	Left Turn	18.7	С					
	Subtotal	287	292	101.7%	28.0	15.3	С	
	Left Turn	33	32	98.2%	63.0	4.4	E	
\ \ /D	Through	481	490	101.9%	5.8	1.1	Α	
WB	Right Turn	51	50	98.2%	2.6	1.2	Α	
	Subtotal	565	573	101.3%	8.6	1.3	Α	
	Total	1,096	1,109	101.2%	23.4	13.0	С	

Intersection 5

E St-Richards Blvd/First St

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	524	529	100.9%	23.1	3.7	С
NB	Through	97	96	99.1%	22.9	4.4	С
IND	Right Turn	286	273	95.3%	9.9	2.3	Α
	Subtotal	907	897	98.9%	19.2	3.1	В
	Left Turn	1	1	70.0%	2.2	5.9	Α
SB	Through	187	186	99.3%	45.5	14.0	D
36	Right Turn	16	17	105.0%	39.7	34.5	D
	Subtotal	204	203	99.6%	43.9	12.1	D
	Left Turn	9	10	105.6%	90.6	51.1	F
EB	Through	76	79	103.3%	109.6	33.4	F
LB	Right Turn	258	268	103.8%	18.4	6.2	В
	Subtotal	343	356	103.7%	41.7	12.2	D
	Left Turn	209	205	98.2%	69.7	17.7	E
WB	Through	25	25	101.2%	43.2	14.3	D
VVB	Right Turn	4	4	87.5%	9.7	17.1	Α
	Subtotal	238	234	98.3%	66.1	16.2	Е
	Total	1,692	1,690	99.9%	33.2	4.9	С

CEQA Cumulative 2 No Project Richards Blvd - Olive Dr Circulation No Build - Cumulative Conditions AM Peak Hour

Intersection 6

Richards Blvd/Olive Dr

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	า)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	619	614	99.2%	24.2	2.5	С
NB	Through	704	706	100.3%	9.9	1.6	Α
IND	Right Turn	40	40	100.0%	0.8	0.5	Α
	Subtotal	1,363	1,360	99.8%	15.8	1.3	В
	Left Turn	54	51	95.2%	65.7	13.9	E
SB	Through	541	553	102.1%	34.9	10.1	С
36	Right Turn	59	59	100.5%	25.9	15.1	С
	Subtotal	654	663	101.4%	36.0	10.6	D
	Left Turn	49	44	89.4%	67.1	16.6	E
EB	Through	21	17	81.9%	34.6	17.9	С
LB	Right Turn	182	181	99.6%	5.7	0.9	Α
	Subtotal	252	242	96.2%	19.8	2.6	В
	Left Turn	118	111	94.4%	55.0	5.7	D
WB	Through	45	43	94.7%	67.9	22.3	Ε
WB	Right Turn	154	154	100.3%	50.6	19.2	D
	Subtotal	317	308	97.3%	55.5	14.0	Е
	Total	2,586	2,574	99.5%	26.7	3.6	С

Intersection 7

Richards Blvd/I-80 WB Ramps

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	617	621	100.7%	36.7	3.2	D
NB	Through	591	593	100.4%	9.6	1.0	Α
IND	Right Turn						
	Subtotal	1,208	1,214	100.5%	23.5	1.8	С
	Left Turn						
SB	Through	666	663	99.5%	10.6	1.9	В
36	Right Turn	200	193	96.4%	3.9	0.9	Α
	Subtotal	866	855	98.8%	9.0	1.5	Α
	Left Turn						
EB	Through						
LD	Right Turn						
	Subtotal						
	Left Turn	206	203	98.4%	33.4	3.4	С
WB	Through						
	Right Turn	776	774	99.8%	23.2	3.3	С
	Subtotal	982	977	99.5%	25.4	2.8	С
	Total	3,056	3,047	99.7%	20.2	0.8	С

CEQA Cumulative 2 No Project Richards Blvd - Olive Dr Circulation No Build - Cumulative Conditions AM Peak Hour

Intersection 8

Richards Blvd/I-80 EB Ramps

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	982	971	98.8%	25.2	3.5	С
	Right Turn	95	89	93.9%	25.3	4.7	С
	Subtotal	1,077	1,060	98.4%	25.2	3.4	С
	Left Turn	311	305	97.9%	27.7	2.4	С
SB	Through	561	564	100.5%	11.5	1.0	В
36	Right Turn						
	Subtotal	872	869	99.6%	17.3	0.8	В
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn	722	718	99.4%	19.9	1.7	В
WB	Through						
	Right Turn	226	230	101.7%	11.4	2.8	В
	Subtotal	948	947	99.9%	18.0	1.4	В
	Total	2,897	2,876	99.3%	20.5	1.3	С

Intersection 9

Research Park Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	85	84	98.6%	67.0	13.7	E
NB	Through	5	5	100.0%	31.0	32.4	С
	Right Turn	40	39	98.0%	7.0	3.8	Α
	Subtotal	130	128	98.5%	46.9	10.3	D
	Left Turn	22	22	98.6%	47.4	19.3	D
SB	Through	22	20	92.3%	34.1	14.7	С
36	Right Turn	136	135	98.9%	12.4	3.6	В
	Subtotal	180	177	98.1%	19.0	3.8	В
	Left Turn	418	416	99.5%	50.5	8.0	D
EB	Through	718	723	100.7%	15.7	2.2	В
LB	Right Turn	147	144	97.8%	17.7	2.5	В
	Subtotal	1,283	1,283	100.0%	27.7	3.7	С
	Left Turn	38	38	98.7%	125.5	37.8	F
WB	Through	821	804	97.9%	103.3	36.3	F
WB	Right Turn	23	22	95.2%	75.0	32.8	Ε
	Subtotal	882	863	97.9%	103.6	35.7	F
	Total	2,475	2,451	99.0%	55.7	13.4	Е

Through

Right Turn

Subtotal

CEQA Cumualtive 2 No Project Richards Blvd - Olive Dr Circulation No Build - Cumulative Conditions PM Peak Hour Signal

65.3

73.2

65.9

Intersection 4

Direction

NB

SB

ЕΒ

D St/First St

378

62

463

Demand Served Volume (vph) Total Delay (sec/veh) Movement Volume (vph) Average Percent Average Std. Dev. LOS Left Turn 31 30 97.1% 22.0 6.2 С 45 98.3% 28.1 С Through 46 6.5 Right Turn 100.0% 14.7 В 64 64 4.3 Subtotal 141 139 98.8% 20.9 3.5 С Left Turn F 187 183 98.1% 99.3 36.5 Through 41 43 105.9% 86.1 34.0 F Ε Right Turn 56 56 99.1% 59.8 38.0 F Subtotal 284 282 99.4% 90.5 35.8 F Left Turn 23 22 94.8% 133.0 63.3

100.2%

97.1%

99.5%

113.5

113.4

114.5

<u> </u>							
	Total	1,386	1,387	100.1%	64.0	21.6	Е
	Subtotal	498	505	101.4%	16.1	2.1	В
WB	Right Turn	49	48	97.1%	9.8	3.6	Α
WB	Through	372	382	102.6%	13.6	2.3	В
	Left Turn	77	76	98.3%	32.3	4.9	С

379

60

461

Intersection 5

E St-Richards Blvd/First St

Signal

F

F

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	314	317	100.8%	29.2	3.4	С
NB	Through	185	181	97.6%	29.1	3.5	С
	Right Turn	356	344	96.6%	15.0	1.9	В
	Subtotal	855	841	98.4%	23.3	2.6	С
	Left Turn	6	5	90.0%	66.2	65.2	E
SB	Through	190	193	101.4%	91.9	51.0	F
36	Right Turn	27	25	94.1%	61.0	53.4	Ε
	Subtotal	223	224	100.2%	87.4	50.6	F
	Left Turn	10	9	90.0%	68.4	32.3	E
EB	Through	53	54	101.7%	84.2	14.1	F
LD	Right Turn	566	566	100.1%	17.4	1.5	В
	Subtotal	629	629	100.0%	24.3	2.7	С
	Left Turn	205	203	98.9%	62.1	13.2	E
WB	Through	157	161	102.2%	46.3	7.0	D
VVB	Right Turn	10	10	101.0%	22.9	19.7	С
	Subtotal	372	373	100.3%	55.3	7.9	Е
	Total	2,079	2,067	99.4%	36.5	7.7	D

CEQA Cumualtive 2 No Project Richards Blvd - Olive Dr Circulation No Build - Cumulative Conditions PM Peak Hour

Intersection 6

Richards Blvd/Olive Dr

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	217	215	98.8%	44.5	4.0	D
NB	Through	631	644	102.0%	10.1	1.0	В
ND	Right Turn	58	55	94.8%	1.0	0.8	Α
	Subtotal	906	913	100.8%	17.1	1.2	В
	Left Turn	110	109	99.2%	52.4	10.9	D
SB	Through	789	799	101.3%	25.6	5.3	С
36	Right Turn	62	60	97.4%	19.5	6.5	В
	Subtotal	961	968	100.8%	28.2	5.4	С
	Left Turn	38	21	56.1%	65.7	18.4	E
EB	Through	35	22	62.0%	41.9	19.0	D
LD	Right Turn	455	454	99.7%	15.8	3.1	В
	Subtotal	528	497	94.0%	19.1	3.0	В
	Left Turn	149	149	99.9%	80.9	23.5	F
WB	Through	34	34	99.4%	53.9	22.1	D
WB	Right Turn	186	180	96.6%	36.8	13.5	D
	Subtotal	369	362	98.2%	56.7	16.2	Е
	Total	2,764	2,741	99.2%	26.8	3.8	С

Intersection 7

Richards Blvd/I-80 WB Ramps

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	776	757	97.5%	35.9	2.9	D
NB	Through	587	592	100.8%	2.6	0.8	Α
IND	Right Turn						
	Subtotal	1,363	1,348	98.9%	21.3	1.8	С
	Left Turn						_
SB	Through	1,186	1,191	100.4%	17.0	2.1	В
30	Right Turn	368	377	102.4%	9.3	2.2	Α
	Subtotal	1,554	1,568	100.9%	15.3	2.0	В
	Left Turn						
EB	Through						
LD	Right Turn						
	Subtotal						
	Left Turn	85	84	99.2%	50.8	8.9	D
WB	Through						
	Right Turn	324	323	99.6%	11.2	0.9	В
	Subtotal	409	407	99.5%	19.8	1.8	В
	Total	3,326	3,323	99.9%	18.2	1.3	В

CEQA Cumualtive 2 No Project Richards Blvd - Olive Dr Circulation No Build - Cumulative Conditions PM Peak Hour

Intersection 8

Richards Blvd/I-80 EB Ramps

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	1,193	1,189	99.7%	20.8	2.9	С
	Right Turn	125	119	95.1%	27.1	5.0	С
	Subtotal	1,318	1,308	99.3%	21.4	3.0	С
	Left Turn	465	455	97.9%	35.3	3.6	D
SB	Through	806	806	100.0%	13.4	2.9	В
36	Right Turn						
	Subtotal	1,271	1,261	99.2%	21.5	3.0	С
	Left Turn						
EB	Through						
LD	Right Turn						
	Subtotal						
	Left Turn	800	797	99.6%	25.6	5.8	С
WB	Through						
	Right Turn	170	169	99.6%	12.7	2.6	В
	Subtotal	970	966	99.6%	23.3	5.0	С
	Total	3,559	3,536	99.3%	22.0	2.2	С

Intersection 9

Research Park Dr/Richards Blvd

Signal

	1	Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	104	101	97.0%	61.6	10.1	E
NB	Through	25	23	91.6%	32.4	12.5	С
ND	Right Turn	54	56	103.1%	6.9	2.1	Α
	Subtotal	183	180	98.1%	39.9	7.1	D
	Left Turn	40	36	89.8%	89.1	25.7	F
SB	Through	16	16	101.3%	81.9	43.1	F
36	Right Turn	431	429	99.5%	67.6	30.2	Ε
	Subtotal	487	481	98.7%	70.1	29.6	Е
	Left Turn	426	424	99.6%	61.7	6.8	E
EB	Through	1,110	1,105	99.6%	19.2	2.5	В
LD	Right Turn	70	71	100.7%	19.7	4.3	В
	Subtotal	1,606	1,600	99.6%	31.0	2.7	С
	Left Turn	29	27	93.1%	82.6	20.2	F
WB	Through	699	692	99.0%	54.1	11.0	D
VVB	Right Turn	39	40	102.6%	23.0	10.8	С
	Subtotal	767	759	98.9%	53.3	10.5	D
	Total	3,043	3,019	99.2%	43.1	5.4	D

CEQA Cumulative 3 No Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure - Cumulative Conditions
AM Peak Hour

Intersection 4 D St/First St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	14	14	101.4%	39.8	20.9	D
NB	Through	17	16	96.5%	40.1	19.9	D
IND	Right Turn	31	32	101.6%	7.9	4.1	Α
	Subtotal	62	62	100.2%	25.2	9.6	С
	Left Turn	85	86	100.9%	76.5	63.4	E
SB	Through	29	28	95.9%	70.5	56.1	Ε
36	Right Turn	68	67	98.7%	42.5	53.1	D
	Subtotal	182	181	99.3%	64.1	56.6	Е
	Left Turn	28	26	93.9%	54.4	21.8	D
EB	Through	227	233	102.7%	25.3	11.4	С
LB	Right Turn	32	30	93.4%	32.8	28.0	С
	Subtotal	287	289	100.8%	28.8	11.7	С
	Left Turn	33	22	65.2%	51.8	8.4	D
WB	Through	481	520	108.0%	8.7	2.0	Α
	Right Turn	51	16	32.0%	9.0	13.2	Α
	Subtotal	565	558	98.7%	10.5	2.1	В
	Total	1,096	1,090	99.4%	26.4	13.8	С

Intersection 5 E St-Richards Blvd/First St Signal

	1	Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	524	516	98.5%	20.9	2.2	С
NB	Through	97	105	108.2%	21.1	2.6	С
IND	Right Turn	286	282	98.5%	9.0	1.3	Α
	Subtotal	907	903	99.6%	17.0	1.6	В
	Left Turn	1	1	110.0%	18.3	25.2	В
SB	Through	187	186	99.3%	45.8	24.1	D
ЭD	Right Turn	16	17	106.3%	24.5	17.9	С
	Subtotal	204	204	99.9%	44.3	22.8	D
	Left Turn	9	9	102.2%	90.3	40.0	F
EB	Through	76	78	102.2%	95.2	20.7	F
LD	Right Turn	258	267	103.6%	17.6	5.2	В
	Subtotal	343	354	103.2%	37.4	9.1	D
	Left Turn	209	206	98.3%	81.3	21.9	F
WB	Through	25	24	96.4%	46.3	14.9	D
WB	Right Turn	4	3	85.0%	4.0	5.8	Α
	Subtotal	238	233	97.9%	76.7	19.4	Е
	Total	1,692	1,694	100.1%	33.6	5.4	С

CEQA Cumulative 3 No Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure - Cumulative Conditions
AM Peak Hour

Intersection 6

Richards Blvd/Olive Dr

Signal

	Ī	Demand	Served Vo	lume (vph)	Tota	Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn	631	671	106.4%	21.0	1.9	С	
NB	Through	780	783	100.4%	7.8	0.6	Α	
ND	Right Turn	58	42	71.6%	0.5	0.5	Α	
	Subtotal	1,469	1,496	101.8%	13.3	0.7	В	
	Left Turn	54	51	94.3%	66.2	14.7	E	
SB	Through	541	552	101.9%	37.1	14.8	D	
36	Right Turn	59	59	99.2%	44.8	17.3	D	
	Subtotal	654	661	101.1%	39.7	14.7	D	
	Left Turn	49	48	97.3%	70.5	15.3	E	
EB	Through	21	19	92.4%	35.7	12.3	D	
LB	Right Turn	182	183	100.6%	5.0	0.8	Α	
	Subtotal	252	250	99.3%	21.7	6.9	С	
	Left Turn	60	61	101.0%	50.9	6.6	D	
WB	Through	33	34	103.3%	44.9	8.6	D	
WB	Right Turn	78	76	96.8%	25.0	7.4	С	
	Subtotal	171	170	99.5%	38.1	6.4	D	
	Total	2,546	2,577	101.2%	22.9	4.0	С	

Intersection 7

I-80 WB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	617	629	101.9%	38.1	3.2	D
NB	Through	591	606	102.6%	10.7	2.0	В
IND	Right Turn						
	Subtotal	1,208	1,235	102.2%	24.5	1.8	С
	Left Turn						
SB	Through	617	621	100.7%	10.2	2.3	В
36	Right Turn	167	188	112.8%	3.8	0.8	Α
	Subtotal	784	810	103.3%	8.8	1.8	Α
	Left Turn						
EB	Through						
LD	Right Turn						
	Subtotal						
	Left Turn	255	236	92.4%	33.8	4.5	С
WB	Through						
	Right Turn	882	898	101.9%	32.0	15.9	С
	Subtotal	1,137	1,134	99.7%	32.4	13.3	С
	Total	3,129	3,179	101.6%	23.1	4.6	С

CEQA Cumulative 3 No Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure - Cumulative Conditions
AM Peak Hour

Intersection 8

I-80 EB Ramps/Richards Blvd

Signal

		Demand	Served Vo	Served Volume (vph) Total Delay (sec/veh) Average Percent Average Std. Dev.		h)	
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	982	984	100.2%	26.4	5.2	С
ND	Right Turn	95	93	97.7%	24.4	4.2	С
	Subtotal	1,077	1,077	100.0%	26.2	5.0	С
	Left Turn	311	295	94.9%	29.7	2.3	С
SB	Through	561	565	100.7%	10.2	1.1	В
SB	Right Turn						
	Subtotal	872	860	98.6%	16.9	1.0	В
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn	722	715	99.0%	19.2	1.5	В
WB	Through						
VVD	Right Turn	226	232	102.7%	12.4	1.1	В
	Subtotal	948	947	99.9%	17.5	1.1	В
	Total	2,897	2,884	99.5%	20.6	1.8	С

Intersection 9

Research Park Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	85	85	100.1%	66.7	10.7	E
NB	Through	5	5	98.0%	39.5	32.3	D
IND	Right Turn	40	38	95.8%	8.5	6.0	Α
	Subtotal	130	128	98.7%	47.5	9.3	D
	Left Turn	22	23	102.7%	48.8	11.1	D
SB	Through	22	21	93.6%	46.5	16.8	D
36	Right Turn	136	133	97.9%	18.5	8.5	В
	Subtotal	180	176	98.0%	25.2	7.8	С
	Left Turn	418	394	94.2%	46.1	5.4	D
EB	Through	718	733	102.0%	14.7	2.5	В
LB	Right Turn	147	155	105.4%	17.2	4.2	В
	Subtotal	1,283	1,281	99.9%	24.6	2.0	С
	Left Turn	38	37	98.4%	83.7	17.4	F
WB	Through	821	817	99.5%	55.9	12.4	Ε
VVD	Right Turn	23	23	98.3%	35.3	17.8	D
	Subtotal	882	877	99.4%	56.8	12.4	Е
	Total	2,475	2,463	99.5%	36.8	4.3	D

CEQA Cumulative 3 No Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure - Cumulative Conditions
PM Peak Hour

Intersection 4 D St/First St Signal

	I	Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	ո)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	31	30	97.1%	23.3	6.4	С
Direction Movement Volume (vph) A NB Left Turn Through Right Turn 31 46 64 5ubtotal 141 SB Left Turn Through Right Turn 187 41 80 80 80 80 80 80 80 80 80 80 80 80 80	46	99.8%	26.7	5.8	С		
IND	Right Turn	64	63	98.9%	14.6	4.4	В
	Right Turn Subtotal Left Turn Through Right Turn Subtotal Left Turn Through	141	139	98.8%	20.4	2.4	С
	Left Turn	187	182	97.3%	99.4	56.0	F
CD	Through	41	44	108.3%	98.4	57.1	F
30	Right Turn	56	54	95.7%	70.0	51.4	Ε
	Subtotal	284	280	98.6%	94.5	55.7	F
	Left Turn	23	23	99.1%	ent Average Std. Dev. L .% 23.3 6.4 .% 26.7 5.8 .% 14.6 4.4 .% 20.4 2.4 .% 99.4 56.0 .% 98.4 57.1 .% 70.0 51.4 .% 94.5 55.7 .% 97.9 34.7 .% 105.8 39.2 .% 94.0 35.3 .% 104.3 38.0 .% 34.0 3.4 1% 13.1 2.3 .% 9.5 3.5 .% 15.4 1.7	F	
ED	Through	378	376	99.6%	105.8	39.2	F
LD	Movement Volume (vph) Average Percent Average Std. Dev. Left Turn 31 30 97.1% 23.3 6.4 Through 46 46 99.8% 26.7 5.8 Right Turn 64 63 98.9% 14.6 4.4 Subtotal 141 139 98.8% 20.4 2.4 Left Turn 187 182 97.3% 99.4 56.0 Through 41 44 108.3% 98.4 57.1 Right Turn 56 54 95.7% 70.0 51.4 Subtotal 284 280 98.6% 94.5 55.7 Left Turn 23 23 99.1% 97.9 34.7 Through 378 376 99.6% 105.8 39.2 Right Turn 62 60 97.1% 94.0 35.3 Subtotal 463 459 99.2% 104.3 38.0 Left Tu	F					
	Subtotal	463	459	99.2%	104.3	38.0	F
	Left Turn	77	63	82.2%	34.0	3.4	С
\A/D	Through	372	399	107.1%	13.1	2.3	В
VVD	Right Turn	49	30	60.2%	9.5	3.5	Α
	Subtotal	498	491	98.7%	15.4	1.7	В
				62.1	19.8	Е	

Intersection 5 E St-Richards Blvd/First St Signal

	1	Demand	Served Vo	lume (vph)	Tota	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	314	304	96.7%	29.3	2.0	С
NB	Through	185	209	113.0%	28.5	3.7	С
IND	Right Turn	356	390	109.5%	17.0	2.4	В
	Subtotal	855	903	105.6%	23.6	2.0	С
	Left Turn	6	6	96.7%	45.4	50.0	D
CD	Through	190	192	101.0%	75.8	37.0	Ε
SB	Right Turn	27	25	94.1%	45.8	47.3	D
	Subtotal	223	223	100.0%	71.3	38.0	Е
	Left Turn	10	9	94.0%	60.1	41.9	E
EB	Through	53	55	103.2%	92.0	16.5	F
LD	Right Turn	566	561	99.1%	17.1	2.1	В
	Subtotal	629	625	99.3%	24.8	4.5	С
	Left Turn	205	201	98.0%	63.1	14.0	E
WB	Through	157	161	102.7%	48.7	7.3	D
VVD	Right Turn	10	10	102.0%	34.1	40.8	С
	Subtotal	372	372	100.1%	56.7	7.8	Е
	Total	2,079	2,123	102.1%	34.5	5.7	С

CEQA Cumulative 3 No Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure - Cumulative Conditions
PM Peak Hour

Intersection 6

Richards Blvd/Olive Dr

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	227	241	106.0%	48.1	4.7	D
NB	Through	684	747	109.2%	9.5	0.7	Α
IND	Right Turn	86	54	63.3%	1.1	0.8	Α
	Subtotal	997	1,042	104.5%	18.1	1.1	В
	Left Turn	110	108	97.9%	45.2	7.4	D
SB	Through	789	791 100.3%		25.1	3.0	С
36	Right Turn	62	61	98.5%	20.9	6.0	С
	Subtotal	961	960	99.9%	27.1	3.4	С
	Left Turn	38	35	91.6%	60.4	22.3	E
EB	Through	35	35	101.1%	50.7	11.6	D
LB	Right Turn	455	453	99.5%	16.6	4.2	В
	Subtotal	528	523	99.0%	21.9	2.8	С
	Left Turn	78	79	101.4%	50.0	7.1	D
WB	Through	24	23	96.7%	40.3	16.8	D
VVD	Right Turn	133	127	95.2%	25.0	8.5	С
	Subtotal	235	229	97.4%	35.3	6.2	D
	Total	2,721	2,754	101.2%	23.4	1.4	С

Intersection 7

I-80 WB Ramps/Richards Blvd

Signal

	I	Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Yolume (vph) Total Delay (sec/veh Average 98.3% 33.8 2.1 100.4% 4.3 0.9 99.2% 21.2 1.3 99.9% 20.2 2.5 112.4% 10.2 1.5 102.7% 17.7 2.2		LOS	
	Left Turn	776	763	98.3%	33.8	2.1	С
NB	Through	587	589	100.4%	4.3	0.9	Α
IND	Right Turn						
	Subtotal	1,363	1,352	99.2%	21.2	1.3	С
	Left Turn						
SB	Through	1,120	1,119	99.9%	20.2	2.5	С
28	Right Turn	329	370	112.4%	10.2	1.5	В
	Subtotal	1,449	1,489	102.7%	17.7	2.2	В
	Left Turn						
EB	Through						
LD	Right Turn						
	Subtotal						
	Left Turn	143	116	81.0%	47.2	5.3	D
WB	Through						
VVD	Right Turn	415	452	109.0%	14.6	3.2	В
	Subtotal	558	568	568 101.8%		2.7	С
	Total	3,370	3,409	101.2%	19.7	1.4	В

CEQA Cumulative 3 No Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure - Cumulative Conditions
PM Peak Hour

Intersection 8

I-80 EB Ramps/Richards Blvd

Signal

		Demand	Served Vo	Total	Delay (sec/ve	h)	
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
1	Left Turn						
NB	Through	1,193	1,190	99.7%	25.6	4.3	С
IND	Right Turn	125	119	95.0%	29.6	7.3	С
	Subtotal	1,318	1,308	99.3%	25.9	4.5	С
	Left Turn	465	450	96.9%	43.6	10.7	D
SB	Through	798	773	96.9%	12.8	1.6	В
36	Right Turn						
	Subtotal	1,263	1,224	96.9%	24.5	4.4	С
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn	800	799	99.9%	27.2	5.2	С
WB	Through						
WD	Right Turn	170	168	99.0%	11.0	2.3	В
	Subtotal	970	967	99.7%	24.3	4.4	С
	Total		3,499	98.5%	25.0	2.2	С

Intersection 9

Research Park Dr/Richards Blvd

Signal

	1	Demand	Served Vo	lume (vph)	Tota	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	104	99	95.3%	64.4	8.3	E
NB	Through	25	24	96.0%	28.3	7.3	С
IND	Right Turn	54	56	103.5%	7.3	2.1	Α
	Subtotal	183	183 179		42.2	5.8	D
	Left Turn	40	37	91.5%	83.8	22.8	F
SB	Through	16	16	100.0%	74.2	32.3	Ε
	Right Turn	431	428	99.3%	59.9	24.2	Ε
	Subtotal	487	481	98.7%	62.4	23.4	Е
	Left Turn	426	389	91.4%	50.7	8.2	D
EB	Through	1,102	1,116	101.3%	27.3	2.1	С
LD	Right Turn	70	77	109.3%	25.8	5.9	С
	Subtotal	1,598	1,582	99.0%	32.8	3.1	С
	Left Turn	29	26	90.3%	78.9	22.6	E
WB	Through	699	695	99.4%	51.5	17.1	D
WB	Right Turn	39	40	101.3%	23.7	12.9	С
	Subtotal	767	761	99.2%	51.4	17.1	D
	Total	3,035	3,002	98.9%	43.1	5.5	D

Lincoln 40 EIR
CEQA Cumulative 1 No Project
AM Peak Hour

Intersection 5 I-80 WB Ramps/Richards Blvd Uncontrolled

		Storage		Average	Queue (ft)			Maximum	Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn Second Left										
NB	Left Turn Through Right Turn Second Right	200 1,120	3 0	2	0 0	7 1	153 76	49 37	56 21	220 135	NO NO
SB	U Turn Second Left Left Turn Through Right Turn Second Right	1,280 1,800	0 0	0 0	0 0	0 0	44 0	41 0	0 0	82 0	NO NO
ЕВ	U Turn Second Left Left Turn Through Right Turn Second Right	560	0	0	0	1	39	37	0	118	NO
WB	U Turn Second Left Left Turn Through Right Turn Second Right	1,500	1,149	281	672	1,548	1,680	15	1,658	1,695	MAX

Lincoln 40 EIR
CEQA Cumulative 1 No Project
AM Peak Hour

Intersection 6

I-80 EB Ramps/Richards Blvd

Signal

Dissation	Management	Storage		_	Queue (ft)	D. A. a. a. i. a.			Queue (ft)	N .4	Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn	500	420	12	422	450	F10	27	440	F22	B 4 A V
	Through	500	138	13	122	158	510	27	440	533	MAX
	Right Turn	500	115	12	100	133	481	27	410	503	NO
	Second Right										
	U Turn										
	Second Left			_							
SB	Left Turn	360	46	7	39	61	184	44	137	259	NO
	Through	1,300	22	1	20	24	198	22	166	233	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn	160	168	62	96	283	1,149	338	722	1,657	AVG
	Through										
	Right Turn	1,260	13	1	11	14	159	24	124	195	NO
	Second Right										

Lincoln 40 EIR
CEQA Cumulative 1 No Project
PM Peak Hour

Intersection 5 I-80 WB Ramps/Richards Blvd Uncontrolled

		Storage		Average	Queue (ft)			Maximum	Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
ND	Through	200	14	3	8	17	278	55	205	371	MAX
	Right Turn	1,120	3	2	1	7	168	50	132	265	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn										
35	Through	1,280	0	0	0	1	103	17	81	128	NO
	Right Turn	1,800	0	0	0	0	43	58	0	149	NO
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
	Through										
	Right Turn	560	0	0	0	0	8	20	0	60	NO
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn										
	Through										
	Right Turn	1,500	52	27	18	114	402	114	260	650	NO
	Second Right										

Lincoln 40 EIR
CEQA Cumulative 1 No Project
PM Peak Hour

Intersection 6 I-80 EB Ramps/Richards Blvd

Signal

		Storage		Average	Queue (ft)				Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn Second Left Left Turn										
NB	Through Right Turn Second Right	500 500	266 240	56 55	197 172	357 328	567 537	7 7	554 525	576 546	MAX MAX
SB	U Turn Second Left Left Turn Through Right Turn Second Right	360 1,300	106 55	13 4	84 47	126 61	337 304	72 24	255 275	481 359	NO NO
EB	U Turn Second Left Left Turn Through Right Turn Second Right										
WB	U Turn Second Left Left Turn Through Right Turn Second Right	160 1,260	1,245 6	53 1	1,151 4	1,308 8	1,681 97	13 24	1,661 62	1,695 133	AVG NO

CEQA Cumulative 2 No Project Richards Blvd - Olive Dr Circulation **No Build - Cumulative Conditions AM Peak Hour**

Intersection 7

Richards Blvd/I-80 WB Ramps

Signal

		Storage		Average	Queue (ft)			Maximum	Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB SB SB	Left Turn	800	72	4	68	80	298	11	279	311	NO
ND	U Turn Second Left Left Turn Through Right Turn Second Right U Turn Second Left Left Turn Through Right Turn Second Right U Turn Second Right U Turn Second Right U Turn Second Left Left Turn Through Right Turn Second Right U Turn Second Right U Turn Second Right U Turn Second Right U Turn	800	28	4	23	34	316	16	275	328	NO
NB SB EB	Right Turn										
	Second Right										
	U Turn										
	Second Left										
SB T	Left Turn										
	Through	590	23	3	20	29	226	36	172	281	NO
	Right Turn	200	0	0	0	1	82	21	56	126	NO
	Second Right										
	U Turn										
	Second Left										
FR	Left Turn										
LD	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
\M/R	Left Turn	400	38	3	32	43	245	37	197	321	NO
EB T S S U S S U S S U S S U S S U S S U S S U S S U S S U S S U S S U S S U S S U S S U S S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U S U	Through										
	Right Turn	1,200	50	7	42	65	278	51	223	394	NO
	Second Right										

4/4/2017 Fehr & Peers

CEQA Cumulative 2 No Project Richards Blvd - Olive Dr Circulation No Build - Cumulative Conditions AM Peak Hour Signal

Intersection 8

Richards Blvd/I-80 EB Ramps

		Storage		Average Queue (ft)			Maximum Queue (ft)				Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn Second Left Left Turn										
NB	Through Right Turn Second Right	500 500	83 65	9 8	68 52	97 77	464 435	40 40	391 362	515 485	NO NO
SB	U Turn Second Left Left Turn Through Right Turn Second Right	360 1,300	28 16	2 2	24 13	32 19	170 198	19 38	140 133	202 253	NO NO
ЕВ	U Turn Second Left Left Turn Through Right Turn Second Right										
WB	U Turn Second Left Left Turn Through Right Turn Second Right	160 1,260	43 13	3	39 10	51 16	239 159	41 37	202 94	323 231	MAX NO

CEQA Cumulative 2 No Project Richards Blvd - Olive Dr Circulation No Build - Cumulative Conditions PM Peak Hour Signal

Intersection 7

Richards Blvd/I-80 WB Ramps

	1	Storage		Average	Queue (ft)			Maximum	Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB SB EB	Left Turn	800	89	4	83	94	309	2	304	312	NO
ND	Through	800	4	1	3	6	202	64		NO	
Direction Movement (ft) Average U Turn Second Left Left Turn 800 8 Through 800 4 Right Turn Second Right U Turn Second Left Left Turn Through 590 6 Right Turn Second Right U Turn Second Left Left Turn Through Right Turn Second Right U Turn Second Right U Turn Second Right U Turn Second Right U Turn Second Left Left Turn Through Right Turn Second Left Left Turn Through											
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn										
	Through	590	68	7	60	82	463	40	376	520	NO
	Right Turn	200	6	2	3	9	260	38	211	343	MAX
	Second Right										
	U Turn										
	Second Left										
FR	Left Turn										
LD	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
\//D	Left Turn	400	25	3	21	30	144	21	115	181	NO
VVD	Through										
	Right Turn	1,200	12	1	10	14	105	15	83	128	NO
	Second Right										

CEQA Cumulative 2 No Project Richards Blvd - Olive Dr Circulation No Build - Cumulative Conditions PM Peak Hour Signal

Intersection 8

Richards Blvd/I-80 EB Ramps

		Storage		Average	Queue (ft)			Maximum	Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NR	Left Turn										
NB I SS I	Through	500	93	7	81	102	425	49	359	494	NO
	Right Turn	500	73	6	61	80	395	49	330	465	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn	360	48	4	42	53	211	24	173	242	NO
	Through	1,300	20	1	18	22	272	53	199	357	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
FR	Left Turn										
25	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
W/B	Left Turn	160	59	5	54	68	281	38	224	341	MAX
EB SB	Through										
	Right Turn	1,260	10	2	7	14	107	26	68	167	NO
SB EB	Second Right										

CEQA Cumulative 3 No Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure - Cumulative Conditions
AM Peak Hour
Signal

Intersection 7

I-80 WB Ramps/Richards Blvd

Storage Maximum Queue (ft) Exceeds Average Queue (ft) (ft) Direction Movement Average Std. Dev. Minimum Maximum Average Std. Dev. Minimum Maximum Storage? U Turn Second Left Left Turn 800 76 3 71 80 299 10 279 310 NO NB Through 800 33 4 29 39 326 11 322 357 NO Right Turn Second Right U Turn Second Left Left Turn SB Through 23 3 19 28 259 47 347 NO 590 186 Right Turn 0 0 2 200 1 109 25 60 139 NO Second Right U Turn Second Left Left Turn EΒ Through Right Turn Second Right U Turn Second Left Left Turn 400 45 4 39 53 267 37 220 335 NO WB Through Right Turn 1,200 76 20 58 124 404 259 278 1,134 NO Second Right

CEQA Cumulative 3 No Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure - Cumulative Conditions
AM Peak Hour
Signal

Intersection 8

I-80 EB Ramps/Richards Blvd

		Storage		Average (Queue (ft)			Maximum	Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
NB	U Turn Second Left Left Turn										
	Through Right Turn Second Right	500 500	90 71	8 8	76 59	98 79	462 432	Std. Dev. Minimum Maximum Std. 46 398 553 46 369 523 14 138 185 48 131 299 39 182 301 M	NO NO		
SB	U Turn Second Left Left Turn Through Right Turn Second Right	360 1,300	27 14	2 1	24 12	31 16	164 187				NO NO
ЕВ	U Turn Second Left Left Turn Through Right Turn Second Right										
WB	U Turn Second Left Left Turn Through Right Turn Second Right	160 1,260	42 12	2	39 10	44 17	222 140				MAX NO

CEQA Cumulative 3 No Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure - Cumulative Conditions
PM Peak Hour
Signal

Intersection 7

I-80 WB Ramps/Richards Blvd

Storage Average Queue (ft) Maximum Queue (ft) Exceeds (ft) Direction Movement Average Std. Dev. Minimum Maximum Average Std. Dev. Minimum Maximum Storage? U Turn Second Left Left Turn 800 87 4 78 92 310 1 308 312 NO NB Through 800 10 2 7 13 276 28 221 324 NO Right Turn Second Right U Turn Second Left Left Turn SB Through 76 6 68 87 508 36 470 566 NO 590 Right Turn 8 3 4 200 13 272 36 235 331 MAX Second Right U Turn Second Left Left Turn EΒ Through Right Turn Second Right U Turn Second Left Left Turn 400 31 5 23 40 179 35 137 246 NO WB Through Right Turn 1,200 22 3 15 26 148 21 117 173 NO Second Right

CEQA Cumulative 3 No Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure - Cumulative Conditions
PM Peak Hour
Signal

Intersection 8

I-80 EB Ramps/Richards Blvd

		Storage		Average (Queue (ft)			Maximum	Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
-	U Turn										
	Second Left										
NB	Left Turn										
IND	Through	500	119	14	95	136	415	31	363	461	NO
	Right Turn	500	96	13	74	112	385	31	334	431	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn	360	55	6	47	66	234	51	180	350	NO
	Through	1,300	20	1	18	22	262	36	209	326	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
LD	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn	160	57	5	51	70	275	52	210	375	MAX
VVD	Through										
	Right Turn	1,260	8	2	5	11	99	26	62	150	NO
	Second Right										

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Old Davis Rd to CEQA Cumulat AM Peak Hour	o Richards Blv ive No Projec				
		Flow Inputs a	nd Adjustments			
				5.027		
Volume, V				5,927	vph	
Peak-hour factor, PHF				0.92	uob	
Peak 15-min volume, v ₁₅				1,611	veh	
Trucks and buses Recreational vehicles				8.8% 0.0%		
Terrain type				Level		
Grade					:	
Length				1.5	mi	
Trucks and buses PCE, E _T Recreational vehicle PCE, E _F				1.3		
Heavy vehicle adjustment, f	•			0.958		
Driver popoulation factor, f	***			1.00		
Flow rate, v_{D}	P			6,726	pcph	
Number of lanes, N				3	рерп	
Number of lattes, iv				э		
	S	peed Inputs a	nd Adjustments	;		
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				7.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmen	nt f. c			0.0	mph	
TRD adjustment	, .[[16.5	mph	
Calculated free-flow speed,	FES			58.9	mph	
Measured free-flow speed,				30.3	mph	
Free-flow speed curve	113			65	mph	
Tree now speed curve				03	ШрП	
-	Capaci	ty Checks for	Segments with F	Ramps		
	Actual		Mavimum		Violation?	
Entering freeway volume	Actual	ncnh	<u>Maximum</u>	ncnh	<u>Violation?</u>	
Exiting freeway volume		pcph pcph		pcph pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
On-ramp volume		рсрп		рсрп		
	LC	OS and Perfor	mance Measure	S		
Flow rate, v _p				2,242	pcphpl	
Average passenger-car spee	ed S			54.9	mph	
Volume-to-capacity ratio, v				0.95	Πρπ	
Density, D				40.8	pcpmpl	
Level of service, LOS				40.8 E	рерпірі	
Level of service, LOS				L		

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Richards Blvd to Mace Blvd CEQA Cumulative No Project AM Peak Hour	:t			
	Flow Inputs a	nd Adjustments	3		
Volume, V			5,385	vph	
Peak-hour factor, PHF			0.92		
Peak 15-min volume, v ₁₅			1,463	veh	
Trucks and buses			8.8%		
Recreational vehicles			0.0%		
Terrain type			Level		
Grade					
Length				mi	
Trucks and buses PCE, E_T			1.5		
Recreational vehicle PCE, E	₹		1.2		
Heavy vehicle adjustment, f	HV		0.958		
Driver popoulation factor, f	P		1.00		
Flow rate, v _p			6,111	pcph	
Number of lanes, N			3		
	Speed Inputs	and Adjustment	S		
		-			
Lane width			12.0	ft	
Right-side lateral clearance			>6	ft	
Total ramp density, TRD			7.00	ramps/mi	
Lane width adjustment, f _{LW}			0.0	mph	
Lateral clearance adjustmen	nt, f _{LC}		0.0	mph	
TRD adjustment			16.5	mph	
Calculated free-flow speed,	FFS		58.9	mph	
Measured free-flow speed,	FFS			mph	
Free-flow speed curve			65	mph	
-	Capacity Checks for	Segments with	Ramps		
	Actual	Maximum		Violation?	
Entering freeway volume	<u>Actual</u> pcph	IVIGAIIIIUIII	pcph	<u>violation:</u>	
Exiting freeway volume	рсрп		pcph		
On-ramp volume	pcph		pcph		
Off-ramp volume	pcph		pcph		
On ramp volume	рерп		рсрп		
	LOS and Perfor	mance Measure	es		
Flow rate, v _p			2,037	pcphpl	
Average passenger-car spec	2 h		59.2	mph	
Volume-to-capacity ratio, v			0.87	Пірп	
Density, D	, •		34.4	pcpmpl	
Level of service, LOS			54.4 D	ρεριτιρι	
Level of Jet vice, LOJ			D		

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-80 Mace Blvd to O CEQA Cumulati AM Peak Hour	live Drive	t			
	F	low Inputs a	nd Adjustments			
Volume, V				6,312	vph	
Peak-hour factor, PHF				0.96		
Peak 15-min volume, v ₁₅				1,644	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length					mi	
Trucks and buses PCE, E _T				1.5		
Recreational vehicle PCE, E	_			1.2		
Heavy vehicle adjustment,	•			0.958		
Driver popoulation factor, f				1.00		
Flow rate, v_p	P			6,864	pcph	
Number of lanes, N				3	рерп	
Number of lanes, N				3		
	Sp	peed Inputs a	ınd Adjustments			
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				10.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmen	nt, f _{LC}			0.0	mph	
TRD adjustment				22.3	mph	
Calculated free-flow speed,	FFS			53.1	mph	
Measured free-flow speed,	FFS				mph	
Free-flow speed curve				65	mph	
	Capacit	y Checks for	Segments with R	amps		
	<u>Actual</u>		<u>Maximum</u>		Violation?	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
	LO	s and Perfor	mance Measures	<u> </u>		
Flow rate, v _p				2,288	pcphpl	
Average passenger-car spec	ed, S			53.8	mph	
Volume-to-capacity ratio, v				0.97		
Density, D	•			42.5	pcpmpl	
Level of service, LOS				E	ll la .	
				-		

Project Freeway Segment	Lincoln 40 EIR Westbound I-80 Olive Dr to Richa					
Alternative	CEQA Cumulativ					
Time period	AM Peak Hour	e No i roject				
	FI	ow Inputs ar	ıd Adjustments			
Volume, V				6,149	vph	
Peak-hour factor, PHF				0.96	VPII	
Peak 15-min volume, v ₁₅				1,601	veh	
Trucks and buses				8.8%	VCII	
Recreational vehicles				0.0%		
Terrain type				Level		
Grade				Leve.		
Length					mi	
Trucks and buses PCE, E _T				1.5		
Recreational vehicle PCE, E	,			1.2		
Heavy vehicle adjustment, f	-			0.958		
Driver popoulation factor, f				1.00		
Flow rate, v _p	•			6,687	pcph	
Number of lanes, N				3	r -r	
,						
	Sp	eed Inputs a	nd Adjustment	S		
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				10.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmen	nt, f _{ic}			0.0	mph	
TRD adjustment	, 20			22.3	mph	
Calculated free-flow speed,	FFS			53.1	mph	
Measured free-flow speed,					mph	
Free-flow speed curve				65	mph	
•						
	Capacity	Checks for S	Segments with	Ramps		
	<u>Actual</u>		<u>Maximum</u>		Violation?	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
•						
	LOS	and Perforr	nance Measure	es		
Flow rate, v _p				2,229	pcphpl	
Average passenger-car spec	ed, S			55.3	mph	
Volume-to-capacity ratio, v				0.95		
Density, D				40.3	pcpmpl	
Level of service, LOS				E	, , ,	
,						

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-8 Richards Blvd I CEQA Cumulat AM Peak Hour	to Old Davis R ive No Projec				
		Flow Inputs a	nd Adjustments			
Volume, V				5,984	vph	
Peak-hour factor, PHF				0.96		
Peak 15-min volume, v ₁₅				1,558	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length					mi	
Trucks and buses PCE, E _T				1.5		
Recreational vehicle PCE, E _R				1.2		
Heavy vehicle adjustment, f				0.958		
Driver popoulation factor, f				1.00		
Flow rate, v _p				6,508	pcph	
Number of lanes, N				4	p - p - ·	
realiser of failes, it				•		
	S	Speed Inputs a	nd Adjustments	i		
Lane width				12.0	ft	
				>6	ft	
Right-side lateral clearance						
Total ramp density, TRD				10.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmer	it, f _{LC}			0.0	mph	
TRD adjustment				22.3	mph	
Calculated free-flow speed,				53.1	mph	
Measured free-flow speed,	FFS				mph	
Free-flow speed curve				65	mph	
	Capaci	tv Checks for	Segments with F	Ramps		
-			<u> </u>	•		
	<u>Actual</u>		<u>Maximum</u>		Violation?	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
·						
	LO	OS and Perfor	mance Measure	S		
Flow rate, v _p				1,627	pcphpl	
Average passenger-car spee	d. S			64.3	mph	
Volume-to-capacity ratio, v				0.69		
Density, D	-			25.3	pcpmpl	
Level of service, LOS				23.3 C	bebilibi	
20101 01 301 1100, 200				C		

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Old Davis Rd to Richards BI CEQA Cumulative No Project PM Peak Hour			
	Flow Inputs a	nd Adjustments		
Volume, V		5,772	vph	
Peak-hour factor, PHF		0.92		
Peak 15-min volume, v ₁₅		1,568	veh	
Trucks and buses		8.8%		
Recreational vehicles		0.0%		
Terrain type		Level		
Grade				
Length		1 -	mi	
Trucks and buses PCE, E _T		1.5 1.2		
Recreational vehicle PCE, E _R Heavy vehicle adjustment, f		0.958		
Driver popoulation factor, f		1.00		
Flow rate, v_p	•	6,550	pcph	
Number of lanes, N		3		
	Speed Inputs a	and Adjustments		
Lane width		12.0	ft	
Right-side lateral clearance		>6	ft	
Total ramp density, TRD		7.00	ramps/mi	
Lane width adjustment, f_{LW}		0.0	mph	
Lateral clearance adjustmer	nt, f _{LC}	0.0	mph	
TRD adjustment		16.5	mph	
Calculated free-flow speed,		58.9	mph	
Measured free-flow speed,	FFS		mph	
Free-flow speed curve		65	mph	
	Capacity Checks for	Segments with Ramps		
	Actual	Maximum	Violation?	
Entering freeway volume	<u>Actual</u> pcph	<u>Maximum</u> pcph	<u>Violation?</u>	
Exiting freeway volume	pcph	pcph		
On-ramp volume	pcph	pcph		
Off-ramp volume	pcph	pcph		
·				
	LOS and Perfor	mance Measures	_	—
Flow rate, v _p		2,183	pcphpl	
Average passenger-car spee		56.3	mph	
Volume-to-capacity ratio, v	c/c	0.93		
Density, D		38.8	pcpmpl	
Level of service, LOS		E		

	<u> </u>	<u> </u>		
Project	Lincoln 40 EIR			
Freeway	Eastbound I-80			
Segment	Richards Blvd to Mace Blvd	1		
Alternative	CEQA Cumulative No Proje			
Time period	PM Peak Hour			
	Flow Inputs	and Adjustments		
Waliona W		F 202	b	
Volume, V		5,392	vph	
Peak-hour factor, PHF		0.92	ah	
Peak 15-min volume, v ₁₅		1,465	veh	
Trucks and buses		8.8%		
Recreational vehicles		0.0%		
Terrain type		Level		
Grade				
Length		_	mi	
Trucks and buses PCE, E _T		1.5		
Recreational vehicle PCE, E _R	•	1.2		
Heavy vehicle adjustment, f		0.958		
Driver popoulation factor, f	P	1.00		
Flow rate, v _p		6,119	pcph	
Number of lanes, N		3		
	Speed Inputs	and Adjustments		
Laura vidalela		12.0	C.	
Lane width		12.0	ft	
Right-side lateral clearance		>6	ft	
Total ramp density, TRD		7.00	ramps/mi	
Lane width adjustment, f _{LW}	0.0	mph		
Lateral clearance adjustmer	0.0	mph		
TRD adjustment	FFC	16.5	mph	
Calculated free-flow speed,	58.9	mph		
Measured free-flow speed,	FFS		mph	
Free-flow speed curve		65	mph	
	Capacity Checks fo	r Segments with Ramps		
	<u>Actual</u>	Maximum	Violation?	
Entering freeway volume	pcph	pcph	<u>violation:</u>	
Exiting freeway volume	pcph	рсрп		
On-ramp volume	pcph	рсрп		
Off-ramp volume	pcph	рсрп		
On-ramp volume	рсрп	рсрп		
LOS and Performance Measures				
Flow rate, v _p		2,040	pcphpl	
Average passenger-car spee	od S	59.2	mph	
Volume-to-capacity ratio, v,	0.87	πρπ		
Density, D	, ,	34.5	pcpmpl	
Level of service, LOS		34.5 D	рсрпірі	
Level of Service, LOS		D		

Project Freeway Segment	Lincoln 40 EIR Westbound I-80 Mace Blvd to O										
Alternative Time period	CEQA Cumulativ	ve No Project									
	TIVIT CURTIOU										
Flow Inputs and Adjustments											
Volume, V				5,655	vph						
Peak-hour factor, PHF				0.95							
Peak 15-min volume, v ₁₅				1,488	veh						
Trucks and buses				8.8%							
Recreational vehicles				0.0%							
Terrain type				Level							
Grade											
Length					mi						
Trucks and buses PCE, E_T				1.5							
Recreational vehicle PCE, E	l			1.2							
Heavy vehicle adjustment, f	: HV			0.958							
Driver popoulation factor, f	P			1.00							
Flow rate, v _p				6,215	pcph						
Number of lanes, N				3							
	Sp	eed Inputs a	nd Adjustment	S							
Lane width				12.0	ft						
Right-side lateral clearance				>6	ft						
Total ramp density, TRD				10.00	ramps/mi						
Lane width adjustment, f _{LW}				0.0	mph						
Lateral clearance adjustmen	nt, t _{LC}			0.0	mph						
TRD adjustment	_			22.3	mph						
Calculated free-flow speed,				53.1	mph						
Measured free-flow speed,	FFS			_	mph						
Free-flow speed curve				65	mph						
	Capacity	Checks for S	Segments with	Ramps							
	Actual		Maximum		Violation?						
Entering freeway volume	<u>Actual</u>	pcph	<u>iviaxilliuiil</u>	pcph	<u>Violation?</u>						
Exiting freeway volume		pcph		pcph							
On-ramp volume		pcph		pcph							
Off-ramp volume		pcph		pcph							
On-ramp volume		рсрп		рсрп							
	LO	S and Perforr	nance Measure	es							
Flow rate, v _p				2,072	pcphpl						
Average passenger-car spec	ed, S			58.6	mph						
Volume-to-capacity ratio, v				0.88							
Density, D				35.3	pcpmpl						
Level of service, LOS				E							
•											

Project Freeway Segment Alternative	Lincoln 40 EIR Westbound I-80 Olive Dr to Richards Blvd CEQA Cumulative No Project											
Time period	PM Peak Hour											
Flow Inputs and Adjustments												
Volume, V			5,495	vph								
Peak-hour factor, PHF			0.95	Vpii								
Peak 15-min volume, v ₁₅			1,446	veh								
Trucks and buses			8.8%	Ven								
Recreational vehicles			0.0%									
Terrain type			Level									
Grade												
Length				mi								
Trucks and buses PCE, E _T			1.5									
Recreational vehicle PCE, E	3		1.2									
Heavy vehicle adjustment,	•		0.958									
Driver popoulation factor, f			1.00									
Flow rate, v _p			6,039	pcph								
Number of lanes, N			3									
	Speed Inputs a	nd Adjustment	S									
Lane width			12.0	ft								
Right-side lateral clearance			>6	ft								
Total ramp density, TRD			10.00	ramps/mi								
Lane width adjustment, f _{LW}			0.0	mph								
Lateral clearance adjustmen	nt, f _{ic}		0.0	mph								
TRD adjustment			22.3	mph								
Calculated free-flow speed,	FFS		53.1	mph								
Measured free-flow speed,	FFS			mph								
Free-flow speed curve			65	mph								
	Capacity Checks for S	Segments with	Ramps									
	<u>Actual</u>	Maximum		Violation?								
Entering freeway volume	pcph		pcph									
Exiting freeway volume	pcph		pcph									
On-ramp volume	pcph		pcph									
Off-ramp volume	pcph		pcph									
	LOS and Perforr	mance Measure	es									
Flow rate, v _p			2,013	pcphpl								
Average passenger-car spec	ed. S		59.7	mph								
Volume-to-capacity ratio, v			0.86									
Density, D	•		33.7	pcpmpl								
Level of service, LOS			D	1 -1- 1-								
,												

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-8 Richards Blvd t CEQA Cumulat PM Peak Hour	o Old Davis R									
Flow Inputs and Adjustments											
Volume, V				6,230	vph						
Peak-hour factor, PHF				0.95							
Peak 15-min volume, v ₁₅				1,639	veh						
Trucks and buses				8.8%							
Recreational vehicles				0.0%							
Terrain type				Level							
Grade											
Length					mi						
Trucks and buses PCE, E _T				1.5							
Recreational vehicle PCE, E _R				1.2							
Heavy vehicle adjustment, f				0.958							
Driver popoulation factor, f	P			1.00							
Flow rate, v _p				6,846	pcph						
Number of lanes, N				4							
	S	peed Inputs a	nd Adjustments	i							
				42.0	c.						
Lane width				12.0	ft						
Right-side lateral clearance				>6	ft						
Total ramp density, TRD				10.00	ramps/mi						
Lane width adjustment, f _{LW}				0.0	mph						
Lateral clearance adjustmer	it, i _{lC}			0.0	mph						
TRD adjustment	FFC			22.3	mph						
Calculated free-flow speed,				53.1	mph						
Measured free-flow speed,	FF3			CF	mph						
Free-flow speed curve				65	mph						
	Capaci	ty Checks for	Segments with I	Ramps							
	Actual		Maximum		Violation?						
Entering freeway volume	<u>Actual</u>	pcph	IVIGAIIIIUIII	pcph	violation:						
Exiting freeway volume		pcph		pcph							
On-ramp volume		pcph		pcph							
Off-ramp volume		pcph		pcph							
on ramp rotatile		popii		Popii							
	LC	OS and Perfor	mance Measure	S							
Flow rate, v _p				1,712	pcphpl						
Average passenger-car spee	d S			63.6	mph						
Volume-to-capacity ratio, v				0.73	πρπ						
Density, D				26.9	pcpmpl						
Level of service, LOS				20.5 D	Poblition						
				_							

Appendix F – CEQA Cumulative Plus Project

Lincoln 40 EIR CEQA Cumulative 1 Plus Project AM Peak Hour

Intersection 1 D St/1st St Signal

	1	Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	14	13	91.4%	48.1	26.7	D
NB	Through	17	17	100.0%	35.6	11.7	D
IND	Right Turn	31	31	98.4%	7.6	6.1	Α
	Subtotal	62	60	97.3%	23.7	8.7	С
	Left Turn	85	84	99.1%	96.8	110.5	F
SB	Through	29	27	94.1%	83.5	92.1	F
36	Right Turn	68	67	99.0%	48.4	85.0	D
	Subtotal	182	179	98.2%	77.9	102.5	Е
	Left Turn	28	28	99.3%	70.6	20.6	Ε
EB	Through	229	235	102.8%	24.7	14.8	С
LB	Right Turn	32	32	99.4%	33.9	21.8	С
	Subtotal	289	295	102.1%	30.3	15.2	С
	Left Turn	33	34	101.5%	61.2	7.8	Ε
WB	Through	482	455	94.3%	5.8	2.2	Α
VVD	Right Turn	51	48	94.5%	2.5	1.0	Α
	Subtotal	566	536	94.8%	9.0	2.2	Α
	Total	1,099	1,070	97.4%	25.8	15.3	С

Intersection 2 E St-Richards Blvd/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	ո)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	525	496	94.6%	21.0	2.6	С
NB	Through	98	90	91.9%	19.9	3.3	В
ND	Right Turn	291	276	94.9%	9.4	2.2	Α
	Subtotal	914	863	94.4%	17.0	2.6	В
	Left Turn	1	1	60.0%	14.2	27.4	В
SB	Through	188	186	99.1%	39.3	4.5	D
36	Right Turn	16	15	95.0%	15.6	8.9	В
	Subtotal	205	202	98.6%	38.2	4.9	D
	Left Turn	9	9	96.7%	75.2	61.5	E
EB	Through	76	76	100.5%	117.3	35.5	F
LB	Right Turn	260	267	102.5%	15.5	3.8	В
	Subtotal	345	352	101.9%	39.7	13.1	D
	Left Turn	212	212	99.8%	73.3	19.8	E
WB	Through	25	23	93.6%	52.6	18.0	D
WD	Right Turn	4	4	87.5%	9.4	11.5	Α
	Subtotal	241	238	98.9%	70.9	19.9	Е
	Total	1,705	1,655	97.1%	32.5	4.4	С

Lincoln 40 EIR CEQA Cumulative 1 Plus Project AM Peak Hour

Intersection 3

Olive Dr/Olive Dr Off-Ramp

Side-street Stop

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through						
IND	Right Turn						
	Subtotal						
	Left Turn						
SB	Through						
36	Right Turn						
	Subtotal						
	Left Turn						
EB	Through						
EB	Right Turn						
	Subtotal						
	Left Turn						
WB I	Through	165	163	98.5%	0.5	0.0	Α
	Right Turn						
	Subtotal	165	163	98.5%	0.5	0.0	А
	Total	165	163	98.5%	0.5	0.0	Α

Intersection 4

Olive Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	619	601	97.1%	43.8	2.8	D
NB	Through	704	663	94.1%	22.5	5.0	С
IND	Right Turn	45	47	103.6%	1.4	0.7	Α
	Subtotal	1,368	1,310	95.8%	31.2	2.8	С
•	Left Turn	60	57	95.3%	60.4	8.9	E
SB	Through	541	554	102.4%	22.4	5.0	С
36	Right Turn	59	57	97.1%	14.7	4.1	В
	Subtotal	660	669	101.3%	24.9	4.5	С
	Left Turn	49	48	98.4%	59.9	19.3	E
EB	Through	23	22	97.0%	35.7	16.4	D
LD	Right Turn	182	181	99.5%	5.5	1.1	Α
	Subtotal	254	252	99.1%	19.2	4.6	В
	Left Turn	126	110	87.5%	55.2	4.8	E
WB	Through	48	44	92.5%	50.2	12.2	D
VVD	Right Turn	161	155	96.3%	31.7	7.1	С
	Subtotal	335	310	92.4%	43.4	4.9	D
	Total	2,617	2,540	97.1%	29.8	2.2	С

Lincoln 40 EIR
CEQA Cumulative 1 Plus Project
AM Peak Hour

Intersection 5

I-80 WB Ramps/Richards Blvd

Uncontrolled

		Demand	Served Vo	lume (vph)	Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	601	602	100.1%	7.2	1.4	Α
IND	Right Turn	617	613	99.3%	6.3	0.7	Α
	Subtotal	1,218	1,215	99.7%	6.7	1.0	Α
	Left Turn						
SB	Through	671	661	98.6%	0.8	0.2	Α
36	Right Turn	203	202	99.4%	1.2	0.4	Α
	Subtotal	874	863	98.8%	0.9	0.2	Α
	Left Turn						
EB	Through						
LB	Right Turn	206	192	93.4%	33.5	8.3	D
	Subtotal	206	192	93.4%	33.5	8.3	D
	Left Turn						
WB	Through	335	309	92.1%	272.0	43.7	F
VVD	Right Turn	442	405	91.6%	269.4	46.5	F
	Subtotal	777	714	91.8%	270.5	45.4	F
	Total	3,075	2,984	97.0%	72.4	8.2	F

Intersection 6

I-80 EB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	985	983	99.8%	35.3	4.1	D
ND	Right Turn	95	92	96.3%	37.1	4.7	D
	Subtotal	1,080	1,075	99.5%	35.4	4.0	D
	Left Turn	313	309	98.6%	42.0	9.6	D
SB	Through	564	542	96.2%	13.7	1.6	В
36	Right Turn						
	Subtotal	877	851	97.0%	24.3	4.5	С
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn	722	711	98.5%	37.4	12.8	D
WB I	Through						
	Right Turn	228	233	102.3%	28.1	13.9	С
	Subtotal	950	945	99.4%	35.1	13.1	D
	Total	2,907	2,870	98.7%	32.2	5.0	С

Lincoln 40 EIR CEQA Cumulative 1 Plus Project AM Peak Hour

Intersection 7

Research Park Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	85	82	95.9%	64.7	10.2	E
NB	Through	5	5	102.0%	38.6	32.8	D
IND	Right Turn	40	40	99.5%	6.7	3.9	Α
	Subtotal	130	126	97.2%	46.8	9.6	D
	Left Turn	22	21	95.0%	59.0	13.9	Е
SB	Through	22	20	89.1%	49.4	18.6	D
36	Right Turn	137	136	99.5%	21.3	6.4	С
	Subtotal	181	177	97.7%	28.8	6.8	С
	Left Turn	419	408	97.4%	44.8	4.5	D
EB	Through	720	714	99.1%	17.0	3.0	В
EB	Right Turn	147	136	92.6%	17.9	4.9	В
	Subtotal	1,286	1,258	97.8%	26.0	3.0	С
	Left Turn	38	39	102.9%	100.5	13.7	F
\A/D	Through	823	810	98.4%	71.4	20.7	Ε
WB	Right Turn	23	22	96.5%	46.4	24.7	D
	Subtotal	884	871	98.6%	72.3	19.7	Е
	Total	2,481	2,432	98.0%	43.1	6.5	D

Lincoln 40 EIR CEQA Cumulative 1 Plus Project PM Peak Hour

Intersection 1 D St/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	31	30	97.4%	23.8	10.4	С
NB	Through	46	44	95.7%	22.8	6.7	С
IND	Right Turn	64	67	104.2%	30.4	7.6	С
	Subtotal	141	141	99.9%	27.0	5.5	С
'	Left Turn	187	176	94.0%	213.0	52.1	F
SB	Through	41	35	85.4%	202.5	55.7	F
30	Right Turn	56	54	95.9%	159.4	38.7	F
	Subtotal	284	264	93.1%	201.1	48.5	F
	Left Turn	23	19	81.7%	260.6	48.5	F
EB	Through	378	332	87.8%	244.8	23.5	F
LD	Right Turn	62	54	86.5%	232.8	25.9	F
	Subtotal	463	404	87.3%	243.8	24.4	F
	Left Turn	77	76	98.3%	34.3	5.0	С
WB	Through	372	377	101.3%	14.9	2.6	В
WB	Right Turn	49	45	91.8%	11.7	3.6	В
	Subtotal	498	498	99.9%	17.9	2.3	В
	Total	1,386	1,307	94.3%	124.1	8.4	F

Intersection 2 E St-Richards Blvd/1st St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	314	308	98.2%	20.3	4.4	С
NB	Through	185	188	101.6%	21.6	4.1	С
NB	Right Turn	356	364	102.4%	10.4	2.6	В
	Subtotal	855	861	100.7%	16.3	3.4	В
	Left Turn	6	7	113.3%	78.5	55.4	E
SB	Through	190	190	99.8%	93.8	45.2	F
36	Right Turn	27	28	102.6%	44.8	19.6	D
	Subtotal	223	224	100.5%	86.4	40.1	F
	Left Turn	10	9	88.0%	69.0	47.0	E
EB	Through	53	50	95.1%	84.4	18.3	F
LB	Right Turn	566	517	91.3%	32.6	3.7	С
	Subtotal	629	576	91.6%	38.5	2.7	D
	Left Turn	205	207	101.0%	66.0	19.6	Ε
WB	Through	157	159	101.4%	48.0	8.5	D
WB	Right Turn	10	9	93.0%	34.8	23.9	С
	Subtotal	372	376	100.9%	58.6	14.4	Е
	Total	2,079	2,037	98.0%	38.8	6.5	D

Lincoln 40 EIR
CEQA Cumulative 1 Plus Project
PM Peak Hour

Intersection 3

Olive Dr/Olive Dr Off-Ramp

Side-street Stop

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through						
IND	Right Turn						
	Subtotal						
	Left Turn						
SB	Through						
36	Right Turn						
	Subtotal						
	Left Turn						
EB	Through						
LD	Right Turn						
	Subtotal						
	Left Turn						
WB I	Through	160	162	101.4%	0.5	0.0	Α
	Right Turn						
	Subtotal	160	162	101.4%	0.5	0.0	Α
	Total	160	162	101.4%	0.5	0.0	Α

Intersection 4

Olive Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	217	210	96.7%	55.2	7.4	E
NIR	Through	631	638	101.1%	38.2	8.0	D
NB	Right Turn	58	61	105.2%	2.1	0.8	Α
	Subtotal	906	909	100.3%	39.6	6.6	D
	Left Turn	110	113	103.1%	67.0	18.3	E
SB	Through	789	751	95.2%	42.6	10.6	D
36	Right Turn	62	58	93.7%	37.5	10.3	D
	Subtotal	961	923	96.0%	45.5	11.9	D
	Left Turn	38	38	100.5%	58.8	12.2	E
EB	Through	35	36	102.9%	39.5	8.9	D
LB	Right Turn	455	454	99.8%	17.7	3.7	В
	Subtotal	528	528	100.0%	22.5	3.5	С
	Left Turn	149	143	96.2%	67.5	10.7	Ε
WB	Through	34	35	104.1%	40.4	6.5	D
WB	Right Turn	186	189	101.4%	29.1	4.1	С
	Subtotal	369	367	99.6%	46.3	6.5	D
	Total	2,764	2,727	98.7%	39.3	5.6	D

Lincoln 40 EIR CEQA Cumulative 1 Plus Project PM Peak Hour

Intersection 5

I-80 WB Ramps/Richards Blvd

Uncontrolled

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	597	591	99.1%	16.6	3.6	С
	Right Turn	776	767	98.8%	10.5	1.4	В
	Subtotal	1,373	1,358	98.9%	13.2	2.2	В
	Left Turn						
SB	Through	1,186	1,136	95.7%	1.5	0.2	Α
36	Right Turn	368	372	101.1%	1.6	0.3	Α
	Subtotal	1,554	1,508	97.0%	1.5	0.2	Α
	Left Turn						_
EB	Through						
LB	Right Turn	85	84	99.2%	3.0	0.8	Α
	Subtotal	85	84	99.2%	3.0	0.8	Α
	Left Turn						
WB	Through	68	70	102.5%	48.7	34.5	Е
	Right Turn	257	258	100.4%	45.0	26.4	E
	Subtotal	325	328	100.8%	45.6	27.4	Е
	Total	3,337	3,278	98.2%	11.0	3.1	В

Intersection 6

I-80 EB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
ND	Through	1,193	1,193	100.0%	53.6	8.2	D
NB	Right Turn	125	123	98.0%	105.8	34.0	F
	Subtotal	1,318	1,315	99.8%	58.5	10.3	Е
	Left Turn	465	439	94.4%	70.1	14.9	E
SB	Through	806	780	96.7%	23.3	1.9	С
36	Right Turn						
	Subtotal	1,271	1,219	95.9%	41.0	7.4	D
	Left Turn						
EB	Through						
LD	Right Turn						
	Subtotal						
	Left Turn	800	730	91.2%	149.5	26.1	F
WB	Through						
	Right Turn	170	164	96.3%	130.8	27.2	F
	Subtotal	970	893	92.1%	145.9	26.4	F
	Total	3,559	3,427	96.3%	74.8	8.8	E

Lincoln 40 EIR CEQA Cumulative 1 Plus Project PM Peak Hour

Intersection 7

Research Park Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	n)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	104	101	97.0%	61.3	5.6	E
ND	Through	25	27	106.4%	26.5	8.3	С
NB	Right Turn	54	55	100.9%	9.6	3.9	Α
	Subtotal	183	182	99.5%	42.2	2.7	D
	Left Turn	40	40	100.0%	105.0	32.8	F
SB	Through	16	16	96.9%	109.7	53.6	F
36	Right Turn	431	430	99.8%	92.5	31.8	F
	Subtotal	487	486	99.7%	94.1	31.9	F
	Left Turn	426	403	94.6%	53.8	9.5	D
EB	Through	1,110	1,043	93.9%	17.6	1.2	В
LB	Right Turn	70	67	95.6%	17.6	4.2	В
	Subtotal	1,606	1,513	94.2%	27.1	3.3	С
	Left Turn	29	25	86.9%	86.7	17.9	F
WB	Through	699	695	99.5%	58.2	12.2	Ε
WB	Right Turn	39	41	104.1%	27.4	10.5	С
	Subtotal	767	761	99.2%	57.7	12.0	Е
	Total	3,043	2,941	96.7%	46.2	6.4	D

CEQA Cumulative 2 Plus Project Richards Blvd - Olive Dr Circulation No Build with Lincoln 40 - Cumulative Conditions AM Peak Hour

Intersection 4 D St/First St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	14	14	96.4%	31.7	15.6	С
	Through	17	16	95.3%	32.5	17.1	С
	Right Turn	31	32	104.5%	14.4	13.6	В
	Subtotal	62	62	100.2%	23.1	11.4	С
	Left Turn	85	84	99.1%	99.1	91.3	F
SB	Through	29	28	96.9%	89.9	94.8	F
36	Right Turn	68	70	102.2%	50.0	62.9	D
	Subtotal	182	182	99.9%	79.9	82.6	Е
	Left Turn	28	29	103.9%	61.2	17.2	Е
EB	Through	229	235	102.6%	24.4	16.2	С
LB	Right Turn	32	30	92.8%	20.4	16.2	С
	Subtotal	289	294	101.6%	26.9	14.8	С
	Left Turn	33	32	98.2%	60.2	7.3	E
WB	Through	483	499	103.4%	5.2	1.2	Α
	Right Turn	51	49	95.7%	2.3	0.9	Α
	Subtotal	567	581	102.4%	7.7	1.8	Α
	Total	1,100	1,118	101.6%	24.7	16.0	С

Intersection 5 E St-Richards Blvd/First St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	526	536	101.9%	21.8	3.3	С
NB	Through	100	99	99.2%	21.3	3.2	С
	Right Turn	299	285	95.3%	9.0	1.6	Α
	Subtotal	925	920	99.5%	17.7	2.8	В
	Left Turn	1	1	90.0%	10.4	21.4	В
SB	Through	188	187	99.3%	38.6	6.6	D
36	Right Turn	16	17	106.9%	26.3	14.8	С
	Subtotal	205	205	99.9%	37.8	5.8	D
	Left Turn	9	9	97.8%	109.4	57.7	F
EB	Through	76	80	104.7%	107.4	22.1	F
LD	Right Turn	260	266	102.1%	16.4	3.8	В
	Subtotal	345	354	102.6%	38.8	9.6	D
	Left Turn	212	207	97.8%	79.1	24.1	E
WB	Through	25	26	103.2%	46.6	17.9	D
	Right Turn	4	3	82.5%	9.5	16.0	Α
	Subtotal	241	237	98.1%	74.7	22.8	Е
	Total	1,716	1,715	99.9%	33.2	5.4	С

CEQA Cumulative 2 Plus Project
Richards Blvd - Olive Dr Circulation
No Build with Lincoln 40 - Cumulative Conditions
AM Peak Hour

Intersection 6

Richards Blvd/Olive Dr

Signal

		Demand	Served Vo	lume (vph)	Total	Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn	619	613	99.0%	24.1	1.5	С	
NB	Through	704	711	101.1%	10.2	1.2	В	
INB	Right Turn	44	40	90.2%	0.9	0.4	Α	
	Subtotal	1,367	1,364	99.8%	15.9	0.6	В	
	Left Turn	60	52	86.8%	63.0	7.1	E	
SB	Through	541	556	102.8%	33.2	7.3	С	
35	Right Turn	59	59	99.3%	26.6	12.6	С	
	Subtotal	660	667	101.0%	34.8	7.5	С	
	Left Turn	49	44	89.4%	59.3	6.7	Ε	
EB	Through	23	19	83.9%	35.5	10.4	D	
LD	Right Turn	182	181	99.7%	5.4	0.8	Α	
	Subtotal	254	245	96.3%	18.0	1.3	В	
	Left Turn	139	131	94.0%	70.6	15.6	Ε	
WB	Through	52	50	96.2%	90.3	45.5	F	
VVD	Right Turn	172	172	100.2%	71.6	40.2	Е	
	Subtotal	363	353	97.3%	74.7	30.3	Е	
	Total	2,644	2,628	99.4%	29.6	5.3	С	

Intersection 7

Richards Blvd/I-80 WB Ramps

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	617	621	100.6%	36.1	3.5	D
NB	Through	595	599	100.7%	9.9	1.5	Α
ND	Right Turn						
	Subtotal	1,212	1,220	100.7%	23.4	1.8	С
	Left Turn						
SB	Through	680	681	100.1%	11.6	2.9	В
36	Right Turn	207	199	95.9%	4.1	1.0	Α
	Subtotal	887	879	99.1%	9.8	2.3	Α
	Left Turn						_
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn	206	201	97.6%	32.8	4.1	С
WB	Through						
	Right Turn	776	775	99.8%	23.9	4.0	С
	Subtotal	982	976	99.3%	25.8	3.4	С
	Total	3,081	3,075	99.8%	20.5	1.2	С

CEQA Cumulative 2 Plus Project Richards Blvd - Olive Dr Circulation No Build with Lincoln 40 - Cumulative Conditions AM Peak Hour

Intersection 8

Richards Blvd/I-80 EB Ramps

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	984	974	98.9%	24.0	3.6	С
IND	Right Turn	95	92	96.5%	22.6	3.0	С
	Subtotal	1,079	1,065	98.7%	23.9	3.4	С
	Left Turn	315	313	99.4%	30.3	2.6	С
SB	Through	571	569	99.6%	12.0	1.7	В
36	Right Turn						
	Subtotal	886	882	99.5%	18.5	0.9	В
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
_	Left Turn	722	717	99.3%	19.7	2.4	В
WB	Through						
VVD	Right Turn	228	230	101.0%	12.3	2.3	В
	Subtotal	950	948	99.7%	17.9	2.1	В
	Total	2,915	2,895	99.3%	20.3	1.5	С

Intersection 9

Research Park Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
'	Left Turn	85	84	98.9%	70.4	16.1	Е
NB	Through	5	5	94.0%	22.7	28.7	С
INB	Right Turn	40	40	99.0%	6.2	3.4	Α
	Subtotal	130	128	98.8%	49.2	11.6	D
	Left Turn	22	22	100.5%	42.5	20.1	D
SB	Through	22	20	92.7%	36.6	17.1	D
36	Right Turn	137	135	98.3%	14.8	4.7	В
	Subtotal	181	177	97.9%	20.4	5.7	С
	Left Turn	422	418	99.1%	48.3	4.4	D
EB	Through	723	724	100.1%	16.4	2.5	В
LD	Right Turn	148	145	98.2%	18.0	1.3	В
	Subtotal	1,293	1,288	99.6%	27.3	2.7	С
	Left Turn	38	36	95.8%	130.7	39.1	F
WB	Through	822	806	98.1%	97.3	32.5	F
VVD	Right Turn	23	22	95.2%	73.5	31.5	Ε
	Subtotal	883	864	97.9%	97.9	32.3	F
	Total	2,487	2,458	98.8%	53.7	12.7	D

CEQA Cumulative 2 Plus Project Richards Blvd - Olive Dr Circulation No Build with Lincoln 40 - Cumulative Conditions PM Peak Hour

Signal

Intersection 4 D St/First St

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	31	32	102.9%	25.4	6.6	С
NB	Through	46	45	98.0%	28.9	8.9	С
	Right Turn	64	63	97.8%	14.1	3.4	В
	Subtotal	141	140	99.0%	20.7	2.1	С
	Left Turn	188	181	96.5%	98.8	58.9	F
SB	Through	41	43	105.6%	98.3	57.4	F
36	Right Turn	56	54	95.9%	68.1	56.5	Ε
	Subtotal	285	278	97.7%	93.2	58.3	F
	Left Turn	23	23	99.1%	128.0	68.5	F
EB	Through	383	380	99.3%	113.4	53.9	F
ED	Right Turn	62	60	96.1%	102.5	47.7	F
	Subtotal	468	463	98.9%	112.9	53.6	F
	Left Turn	77	77	99.6%	37.0	3.0	D
WB	Through	373	384	102.9%	12.9	2.4	В
	Right Turn	49	47	96.5%	10.2	3.9	В
	Subtotal	499	508	101.7%	15.9	2.3	В
	Total	1,393	1,389	99.7%	64.5	18.5	Е

Intersection 5 E St-Richards Blvd/First St Signal

	I	Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	315	320	101.7%	29.9	2.5	С
NB	Through	187	184	98.3%	29.3	4.2	С
INB	Right Turn	367	358	97.5%	15.4	2.6	В
	Subtotal	869	862	99.2%	23.6	2.6	С
	Left Turn	6	6	96.7%	60.5	38.4	Е
SB	Through	194	194	100.1%	71.3	28.3	Ε
SD	Right Turn	27	27	98.5%	48.8	34.8	D
	Subtotal	227	227	99.8%	68.0	27.3	Е
	Left Turn	10	9	86.0%	76.7	48.6	Е
EB	Through	53	53	100.6%	87.1	21.3	F
LB	Right Turn	572	565	98.7%	17.7	2.1	В
	Subtotal	635	627	98.7%	24.6	2.2	С
	Left Turn	213	210	98.5%	82.8	27.2	F
WB	Through	157	160	101.9%	57.3	12.0	Ε
VVB	Right Turn	10	11	109.0%	48.2	18.4	D
	Subtotal	380	381	100.2%	72.0	19.9	Е
	Total	2,111	2,096	99.3%	38.0	7.2	D

CEQA Cumulative 2 Plus Project
Richards Blvd - Olive Dr Circulation
No Build with Lincoln 40 - Cumulative Conditions
PM Peak Hour

Intersection 6

Richards Blvd/Olive Dr

Signal

	1	Demand	Served Vo	lume (vph)	Total	Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn	217	218	100.3%	49.1	2.4	D	
NB	Through	631	648	102.7%	10.4	0.7	В	
IND	Right Turn	73	56	76.0%	1.3	0.8	Α	
	Subtotal	921	921	100.0%	18.7	1.1	В	
	Left Turn	128	110	85.6%	46.7	8.0	D	
SB	Through	789	804	101.9%	27.0	4.8	С	
36	Right Turn	62	62	100.0%	21.0	7.8	С	
	Subtotal	979	976	99.7%	28.7	5.3	С	
	Left Turn	38	22	57.4%	55.7	21.3	E	
EB	Through	42	29	68.1%	54.7	10.8	D	
LD	Right Turn	455	451	99.1%	16.7	4.2	В	
	Subtotal	535	501	93.7%	20.8	3.3	С	
	Left Turn	166	163	98.2%	89.1	27.6	F	
WB	Through	40	39	96.3%	75.8	33.7	Ε	
VVB	Right Turn	200	197	98.3%	56.1	22.3	Ε	
	Subtotal	406	398	98.0%	71.6	21.0	E	
	Total	2,841	2,796	98.4%	30.3	3.0	С	

Intersection 7

I-80 WB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	776	765	98.5%	31.3	2.4	С
NB	Through	602	595	98.8%	2.6	0.5	Α
IND	Right Turn						
	Subtotal	1,378	1,359	98.7%	19.0	1.4	В
	Left Turn						_
SB	Through	1,197	1,202	100.4%	19.0	1.3	В
30	Right Turn	374	382	102.0%	10.4	1.5	В
	Subtotal	1,571	1,584	100.8%	16.9	1.0	В
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn	85	81	95.6%	52.3	4.5	D
WB	Through						
	Right Turn	324	327	100.9%	11.1	1.9	В
	Subtotal	409	408	99.8%	19.8	2.5	В
	Total	3,358	3,351	99.8%	18.1	0.6	В

CEQA Cumulative 2 Plus Project Richards Blvd - Olive Dr Circulation No Build with Lincoln 40 - Cumulative Conditions PM Peak Hour

Intersection 8

I-80 EB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	1,202	1,201	99.9%	20.9	2.5	С
	Right Turn	125	118	94.2%	25.2	4.9	С
	Subtotal	1,327	1,319	99.4%	21.2	2.7	С
	Left Turn	468	462	98.8%	37.9	4.4	D
SB	Through	814	808	99.2%	13.5	3.6	В
36	Right Turn						
	Subtotal	1,282	1,270	99.1%	22.7	3.2	С
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn	800	804	100.5%	25.9	7.3	С
WB	Through						
VVD	Right Turn	176	170	96.7%	12.2	1.9	В
	Subtotal	976	974	99.8%	23.5	6.3	С
	Total	3,585	3,563	99.4%	22.5	2.2	С

Intersection 9

Research Park Dr/Richards Blvd

Signal

	1	Demand	Served Vo	lume (vph)	Total	Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn	105	101	96.4%	63.9	8.2	E	
NB	Through	25	25	100.4%	30.6	12.2	С	
IND	Right Turn	54	54	100.4%	8.8	4.6	Α	
	Subtotal	184	181	98.1%	41.5	6.8	D	
	Left Turn	40	38	95.5%	95.1	24.2	F	
SB	Through	16	18	112.5%	93.5	34.9	F	
36	Right Turn	435	430	98.8%	68.4	28.6	E	
	Subtotal	491	486	98.9%	71.6	28.2	Е	
	Left Turn	429	420	97.8%	59.9	8.6	Е	
EB	Through	1,114	1,116	100.2%	18.8	3.4	В	
LD	Right Turn	71	71	99.6%	21.3	6.5	С	
	Subtotal	1,614	1,607	99.5%	30.1	4.1	С	
	Left Turn	29	27	94.5%	104.6	26.0	F	
WB	Through	703	698	99.3%	66.0	13.0	Ε	
WB	Right Turn	39	39	100.0%	35.0	17.8	С	
	Subtotal	771	765	99.2%	65.6	13.5	Ε	
	Total	3,060	3,037	99.3%	46.1	7.3	D	

CEQA Cumulative 3 Plus Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure with Lincoln 40 - Cumulative Conditions
AM Peak Hour

Intersection 4 D St/First St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
'	Left Turn	14	14	99.3%	38.9	21.2	D
NB	Through	17	17	98.8%	34.2	16.7	С
ND	Right Turn	31	31	100.6%	9.9	7.4	Α
	Subtotal	62	62	99.8%	23.4	6.8	С
	Left Turn	85	84	98.9%	84.9	62.8	F
SB	Through	29	28	94.8%	71.2	50.5	Е
36	Right Turn	68	69	100.7%	35.0	34.1	D
	Subtotal	182	180	99.0%	65.5	50.7	Е
	Left Turn	28	27	96.4%	64.7	19.0	E
EB	Through	229	237	103.4%	27.6	16.4	С
LB	Right Turn	32	29	90.6%	24.1	21.2	С
	Subtotal	289	293	101.3%	30.4	16.1	С
	Left Turn	33	22	67.0%	58.2	6.9	E
WB	Through	484	531	109.7%	9.5	2.2	Α
WB	Right Turn	51	16	31.2%	5.5	7.1	Α
	Subtotal	568	569	100.2%	11.4	2.1	В
	Total	1,101	1,104	100.2%	26.3	11.5	С

Intersection 5 E St-Richards Blvd/First St Signal

	1	Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	527	526	99.8%	20.8	3.7	С
NB	Through	100	107	107.1%	22.7	4.4	С
IND	Right Turn	300	288	96.0%	10.1	1.8	В
	Subtotal	927	921	99.3%	17.9	3.1	В
	Left Turn	1	1	110.0%	10.8	23.3	В
SB	Through	189	187	99.0%	44.8	8.7	D
ЭD	Right Turn	16	16	102.5%	29.4	18.7	С
	Subtotal	206	205	99.3%	43.4	8.5	D
	Left Turn	9	8	93.3%	80.6	57.6	F
EB	Through	76	81	106.1%	113.1	37.2	F
LD	Right Turn	260	265	102.0%	18.8	4.1	В
	Subtotal	345	354	102.6%	43.9	14.0	D
	Left Turn	212	208	98.1%	73.6	18.2	Е
WB	Through	25	25	99.2%	44.0	9.6	D
WB	Right Turn	4	4	92.5%	8.2	12.8	Α
	Subtotal	241	236	98.1%	70.2	16.2	Е
	Total	1,719	1,716	99.8%	33.0	3.5	С

CEQA Cumulative 3 Plus Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure with Lincoln 40 - Cumulative Conditions

np Closure with Lincoln 40 - Cumulative Conditions

AM Peak Hour

Intersection 6

Richards Blvd/Olive Dr

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	631	672	106.5%	34.5	2.9	С
NB	Through	780	788	101.0%	18.7	3.8	В
	Right Turn	64	40	62.2%	4.2	1.2	Α
	Subtotal	1,475	1,499	101.7%	25.1	2.8	С
	Left Turn	61	52	84.8%	59.3	8.7	E
SB	Through	541	553	102.3%	26.2	4.9	С
36	Right Turn	59	57	97.1%	18.6	4.7	В
	Subtotal	661	662	100.2%	28.0	4.5	С
	Left Turn	49	43	88.2%	54.7	15.9	D
EB	Through	23	20	85.7%	46.5	12.8	D
LD	Right Turn	182	182	99.9%	5.5	1.1	Α
	Subtotal	254	245	96.3%	19.1	6.2	В
	Left Turn	79	81	102.7%	53.4	8.8	D
WB	Through	40	40	99.3%	45.5	17.3	D
	Right Turn	98	95	96.6%	30.3	17.9	С
	Subtotal	217	216	99.3%	42.0	12.9	D
	Total	2,607	2,622	100.6%	26.7	2.7	С

Intersection 7

Richards Blvd/I-80 WB Ramps

Signal

	I	Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	617	627	101.6%	36.1	2.5	D
NB	Through	595	607	102.1%	10.6	2.5	В
	Right Turn						
	Subtotal	1,212	1,234	101.8%	23.5	1.6	С
	Left Turn						_
SB	Through	629	639	101.5%	9.7	2.0	Α
36	Right Turn	174	192	110.5%	4.1	0.9	Α
	Subtotal	803	831	103.5%	8.5	1.7	Α
	Left Turn						_
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn	255	234	91.8%	35.8	7.2	D
WB	Through						
	Right Turn	884	900	101.8%	36.7	23.6	D
	Subtotal	1,139	1,134	99.6%	36.6	20.2	D
	Total	3,154	3,199	101.4%	24.1	7.3	С

CEQA Cumulative 3 Plus Project
Richards Blvd - Olive Dr Circulation
Lincoln 40 Cumulative Conditions

Olive Dr Off-Ramp Closure with Lincoln 40 - Cumulative Conditions

AM Peak Hour

Intersection 8

Richards Blvd/I-80 EB Ramps

Signal

		Demand	Served Vo	lume (vph)	Total	h)	
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
1	Left Turn						
NB	Through	984	983	99.9%	26.1	3.9	С
IND	Right Turn	95	93	97.6%	22.5	3.9	С
	Subtotal	1,079	1,075	99.7%	25.8	3.8	С
	Left Turn	315	304	96.5%	30.9	1.9	С
SB	Through	569	571	100.3%	10.4	0.8	В
36	Right Turn						
	Subtotal	884	875	98.9%	17.5	1.3	В
	Left Turn						
EB	Through						
LB	Right Turn						
	Subtotal						
	Left Turn	722	714	98.9%	19.4	1.5	В
WB	Through						
	Right Turn	228	233	102.2%	12.7	2.2	В
	Subtotal	950	947	99.7%	17.8	1.3	В
	Total	2,913	2,897	99.5%	20.7	1.6	С

Intersection 9

Research Park Dr/Richards Blvd

Signal

	1	Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	85	85	100.0%	66.0	10.6	Е
NB	Through	5	5	98.0%	32.4	25.3	С
ND	Right Turn	40	39	96.8%	8.1	6.2	Α
	Subtotal	130	129	98.9%	46.4	8.9	D
	Left Turn	22	22	100.0%	56.7	16.2	Е
SB	Through	22	21	96.8%	41.2	18.5	D
36	Right Turn	137	134	98.0%	19.6	9.5	В
	Subtotal	181	178	98.1%	26.6	9.2	С
	Left Turn	421	397	94.4%	46.4	4.3	D
EB	Through	722	731	101.2%	14.5	2.4	В
LB	Right Turn	148	157	106.1%	15.1	3.7	В
	Subtotal	1,291	1,285	99.6%	24.5	2.2	С
	Left Turn	38	36	95.3%	96.1	17.9	F
WB	Through	822	816	99.3%	65.9	21.0	Ε
VV B	Right Turn	23	22	95.7%	41.9	21.0	D
	Subtotal	883	875	99.0%	66.7	20.5	Е
	Total	2,485	2,466	99.2%	40.4	6.7	D

CEQA Cumulative 3 Plus Project Richards Blvd - Olive Dr Circulation Lincoln 40 - Cumulative Conditions

Olive Dr Off-Ramp Closure with Lincoln 40 - Cumulative Conditions PM Peak Hour

Intersection 4 D St/First St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	31	31	99.4%	26.3	8.2	С
NB	Through	46	44	96.5%	27.9	4.2	С
INB	Right Turn	64	64	100.0%	15.4	4.7	В
	Subtotal	141	139	98.7%	22.3	2.7	С
	Left Turn	188	185	98.6%	99.6	43.6	F
SB	Through	41	43	104.9%	92.1	46.2	F
30	Right Turn	56	54	96.8%	68.2	46.0	Ε
	Subtotal	285	283	99.2%	93.2	43.3	F
	Left Turn	23	22	96.5%	131.4	76.4	F
EB	Through	383	378	98.6%	126.1	75.2	F
LD	Right Turn	62	60	96.8%	127.2	75.1	F
	Subtotal	468	460	98.3%	126.5	74.9	F
	Left Turn	77	64	82.6%	34.4	4.6	С
WB	Through	373	403	108.0%	14.7	2.8	В
	Right Turn	49	29	59.6%	13.5	8.8	В
	Subtotal	499	496	99.3%	17.2	2.5	В
	Total	1,393	1,377	98.9%	67.1	24.4	Е

Intersection 5 E St-Richards Blvd/First St Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn	315	307	97.5%	28.3	1.7	С
NB	Through	187	205	109.4%	28.8	2.5	С
IND	Right Turn	367	391	106.6%	15.1	2.3	В
	Subtotal	869	903	103.9%	22.6	2.0	С
	Left Turn	6	6	98.3%	66.7	43.5	Е
SB	Through	194	197	101.4%	78.6	40.7	Ε
ЭD	Right Turn	27	26	95.6%	53.8	43.3	D
	Subtotal	227	228	100.6%	76.1	40.4	Е
	Left Turn	10	9	90.0%	50.0	34.0	D
EB	Through	53	53	100.2%	83.4	17.4	F
LD	Right Turn	572	568	99.4%	16.2	1.5	В
	Subtotal	635	630	99.3%	22.6	2.3	С
	Left Turn	213	209	97.9%	80.1	33.7	F
WB	Through	157	161	102.7%	58.6	11.3	Ε
VVD	Right Turn	10	11	106.0%	42.4	24.7	D
	Subtotal	380	381	100.1%	71.2	23.3	Е
	Total	2,111	2,142	101.5%	37.5	8.2	D

CEQA Cumulative 3 Plus Project Richards Blvd - Olive Dr Circulation

Olive Dr Off-Ramp Closure with Lincoln 40 - Cumulative Conditions PM Peak Hour

Intersection 6

Richards Blvd/Olive Dr

Signal

		Demand	Served Vo	lume (vph)	Total Delay (sec/veh)			
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn	217	244	112.3%	50.1	3.6	D	
NB	Through	631	747	118.4%	9.5	0.8	Α	
IND	Right Turn	73	57	78.2%	1.3	0.7	Α	
	Subtotal	921	1,048	113.8%	18.6	1.1	В	
	Left Turn	128	110	85.9%	44.5	9.5	D	
SB	Through	789	811	102.8%	25.7	4.0	С	
36	Right Turn	62	62	100.6%	20.3	4.8	С	
	Subtotal	979	983	100.4%	27.5	4.3	С	
	Left Turn	38	21	55.0%	64.1	25.1	E	
EB	Through	42	29	67.9%	45.4	12.6	D	
LB	Right Turn	455	452	99.4%	15.4	2.6	В	
	Subtotal	535	502	93.8%	19.0	2.8	В	
	Left Turn	166	94	56.9%	55.5	6.6	E	
WB	Through	40	28	71.0%	47.5	19.9	D	
WD	Right Turn	200	141	70.3%	31.5	8.9	С	
	Subtotal	406	263	64.9%	41.7	6.8	D	
	Total	2,841	2,796	98.4%	24.2	1.7	С	

Intersection 7

I-80 WB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/vel	ec/veh)	
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn	776	763	98.4%	32.2	2.5	С	
NB	Through	602	599	99.4%	5.0	0.7	Α	
INB	Right Turn							
	Subtotal	1,378	1,362	98.8%	20.5	1.4	С	
	Left Turn							
SB	Through	1,197	1,143	95.5%	20.6	2.0	С	
36	Right Turn	374	379	101.3%	10.2	1.5	В	
	Subtotal	1,571	1,522	96.9%	18.1	1.9	В	
	Left Turn							
EB	Through							
LB	Right Turn							
	Subtotal							
	Left Turn	85	115	135.1%	45.5	4.1	D	
WB	Through							
WB	Right Turn	324	453	139.9%	15.0	2.3	В	
	Subtotal	409	568	138.9%	21.3	2.3	С	
	Total	3,358	3,452	102.8%	19.6	1.1	В	

CEQA Cumulative 3 Plus Project
Richards Blvd - Olive Dr Circulation

Olive Dr Off-Ramp Closure with Lincoln 40 - Cumulative Conditions PM Peak Hour

Intersection 8

I-80 EB Ramps/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total	Delay (sec/ve	h)
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
	Left Turn						
NB	Through	1,202	1,199	99.7%	26.1	4.5	С
ND	Right Turn	125	120	96.2%	30.5	7.0	С
	Subtotal	1,327	1,319	99.4%	26.5	4.7	С
	Left Turn	468	461	98.5%	47.6	9.6	D
SB	Through	814	783	96.1%	12.9	1.5	В
36	Right Turn						
	Subtotal	1,282	1,243	97.0%	26.3	4.6	С
	Left Turn						
EB	Through						
LD	Right Turn						
	Subtotal						
	Left Turn	800	802	100.2%	22.8	1.4	С
WB	Through						
WB	Right Turn	176	172	97.8%	12.5	2.0	В
	Subtotal	976	974	99.8%	21.0	1.2	С
	Total	3,585	3,536	98.6%	24.9	2.0	С

Intersection 9

Research Park Dr/Richards Blvd

Signal

		Demand	Served Vo	lume (vph)	Total Delay (sec/veh)			
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS	
	Left Turn	105	102	97.0%	66.4	8.4	E	
NB	Through	25	23	93.2%	34.0	11.2	С	
IND	Right Turn	54	55	102.0%	8.5	4.2	Α	
	Subtotal	184	180	98.0%	43.5	6.1	D	
	Left Turn	40	37	92.5%	84.8	26.6	F	
SB	Through	16	17	103.8%	82.0	43.3	F	
36	Right Turn	435	432	99.2%	66.0	26.7	Ε	
	Subtotal	491	485	98.8%	68.5	26.5	Е	
	Left Turn	429	382	89.1%	54.2	6.9	D	
EB	Through	1,114	1,119	100.5%	19.9	2.5	В	
LB	Right Turn	71	76	107.6%	22.0	5.0	С	
	Subtotal	1,614	1,578	97.8%	28.6	3.2	С	
	Left Turn	29	28	95.9%	84.3	26.4	F	
WB	Through	703	696	99.0%	54.4	13.4	D	
VVD	Right Turn	39	39	100.0%	23.3	12.2	С	
	Subtotal	771	763	98.9%	53.9	13.9	D	
	Total	3,060	3,006	98.2%	42.0	6.8	D	

Lincoln 40 EIR CEQA Cumulative 1 Plus Project AM Peak Hour

Intersection 5 I-80 WB Ramps/Richards Blvd Uncontrolled

	Storage Average Queue (ft)				Maximum Queue (ft)				Exceeds		
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
NB	U Turn Second Left Left Turn Through	200	2	1	2	5	160	44	80	217	NO
	Right Turn Second Right	1,120	0	0	0	1	49	38	0	106	NO
SB	U Turn Second Left Left Turn Through Right Turn Second Right	1,280 1,800	0 0	0 0	0 0	0 0	38 7	41 24	0 0	82 75	NO NO
EB	U Turn Second Left Left Turn Through Right Turn Second Right	560	0	0	0	0	50	24	22	95	NO
WB	U Turn Second Left Left Turn Through Right Turn Second Right	1,500	1,254	158	1,072	1,541	1,687	12	1,658	1,695	MAX

Lincoln 40 EIR
CEQA Cumulative 1 Plus Project
AM Peak Hour

Intersection 6 I-80 EB Ramps/Richards Blvd

Signal

		Storage					Maximum Queue (ft)				Exceeds	
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?	
NB	U Turn Second Left Left Turn Through Right Turn	500 500	140 117	15 15	124 102	177 153	519 489	34 34	438 408	561 532	MAX NO	
SB	Second Right U Turn Second Left Left Turn Through Right Turn Second Right	360 1,300	45 22	6 1	35 20	54 24	180 206	25 34	137 165	222 258	NO NO	
EB	U Turn Second Left Left Turn Through Right Turn Second Right											
WB	U Turn Second Left Left Turn Through Right Turn Second Right	160 1,260	150 13	55 1	97 11	293 14	1,080 169	326 22	778 124	1,656 194	MAX NO	

Lincoln 40 EIR
CEQA Cumulative 1 Plus Project
PM Peak Hour

Intersection 5 I-80 WB Ramps/Richards Blvd Uncontrolled

	Storage Average Queue (ft)					Maximum Queue (ft)				Exceeds	
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
.,,	Through	200	15	3	10	21	266	34	223	328	MAX
	Right Turn	1,120	4	2	1	6	208	77	82	364	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn										
36	Through	1,280	0	0	0	1	102	23	81	154	NO
	Right Turn	1,800	0	0	0	0	15	32	0	77	NO
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
LD	Through										
	Right Turn	560	0	0	0	0	0	0	0	0	NO
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn										
WD	Through										
	Right Turn	1,500	66	19	33	93	465	92	313	620	NO
	Second Right										

Lincoln 40 EIR
CEQA Cumulative 1 Plus Project
PM Peak Hour

Intersection 6 I-80 EB Ramps/Richards Blvd Signal

		Storage	Average Queue (ft)			Maximum Queue (ft)				Exceeds	
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
	Through	500	274	55	204	340	567	7	555	581	MAX
	Right Turn	500	247	53	179	312	537	7	526	551	MAX
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn	360	104	13	86	128	351	101	255	548	NO
36	Through	1,300	57	5	50	66	314	25	260	350	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
EB	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
W/D	Left Turn	160	1,269	56	1,169	1,356	1,684	11	1,668	1,695	AVG
WB	Through										
	Right Turn	1,260	6	1	3	8	114	31	63	172	NO
	Second Right										

CEQA Cumulative 2 Plus Project
Richards Blvd - Olive Dr Circulation
No Build with Lincoln 40 - Cumulative Conditions
AM Peak Hour

Intersection 7

Richards Blvd/I-80 WB Ramps

Signal

		Storage		Average Queue (ft)					Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn Second Left										
NB	Left Turn	800	73	3	70	79	304	6	297	312	NO
NB	Through	800	31	5	25	39	322	13	303	352	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn										
35	Through	590	25	3	22	30	240	28	203	295	NO
	Right Turn	200	1	0	0	2	105	28	58	145	NO
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn	400	37	3	33	42	233	40	183	321	NO
	Through										
	Right Turn	1,200	54	9	41	68	268	40	218	321	NO
	Second Right	1									

CEQA Cumulative 2 Plus Project Richards Blvd - Olive Dr Circulation No Build with Lincoln 40 - Cumulative Conditions AM Peak Hour Signal

Intersection 8

Richards Blvd/I-80 EB Ramps

		Storage	Average Queue (ft)				Maximum Queue (ft)				Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
IND	Through	500	82	9	67	100	472	43	395	526	NO
	Right Turn	500	64	8	50	80	442	43	366	496	NO
	Second Right										_
	U Turn										
	Second Left										
SB	Left Turn	360	30	3	25	34	171	14	159	197	NO
36	Through	1,300	15	2	13	18	186	31	155	248	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
LD	Through										
	Right Turn										
	Second Right										
	U Turn										<u> </u>
	Second Left										
WB	Left Turn	160	42	2	40	47	224	40	180	301	MAX
VVD	Through										
	Right Turn	1,260	14	2	9	17	158	34	94	231	NO
	Second Right										

CEQA Cumulative 2 Plus Project Richards Blvd - Olive Dr Circulation No Build with Lincoln 40 - Cumulative Conditions PM Peak Hour Signal

Intersection 7

I-80 WB Ramps/Richards Blvd

Storage Average Queue (ft) Maximum Queue (ft) Exceeds (ft) Direction Movement Average Std. Dev. Minimum Maximum Average Std. Dev. Minimum Maximum Storage? U Turn Second Left Left Turn 800 89 3 86 96 311 1 310 312 NO NB Through 800 4 1 3 6 219 65 321 NO 111 Right Turn Second Right U Turn Second Left Left Turn SB Through 70 63 75 490 54 385 NO 590 4 580 Right Turn 6 2 4 9 200 261 42 207 345 MAX Second Right U Turn Second Left Left Turn EΒ Through Right Turn Second Right U Turn Second Left Left Turn 400 24 3 20 29 145 21 115 179 NO WB Through Right Turn 1,200 12 2 9 15 107 19 83 129 NO Second Right

CEQA Cumulative 2 Plus Project Richards Blvd - Olive Dr Circulation No Build with Lincoln 40 - Cumulative Conditions PM Peak Hour Signal

Intersection 8

I-80 EB Ramps/Richards Blvd

		Storage	age Average Queue (ft)				Maximum Queue (ft)				Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
NB	U Turn Second Left Left Turn Through Right Turn Second Right	500 500	98 77	9 8	90 70	121 98	425 395	34 34	378 348	481 452	NO NO
SB	U Turn Second Left Left Turn Through Right Turn Second Right	360 1,300	48 19	4 2	44 17	54 23	240 230	35 30	203 186	302 274	NO NO
EB	U Turn Second Left Left Turn Through Right Turn Second Right										
WB	U Turn Second Left Left Turn Through Right Turn Second Right	160 1,260	59 10	7	54 7	75 13	279 126	46 30	230 71	377 162	MAX NO

CEQA Cumulative 3 Plus Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure with Lincoln 40 - Cumulative Conditions
AM Peak Hour
Signal

Intersection 7

Richards Blvd/I-80 WB Ramps

		Storage		_	Queue (ft)				Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn	800	74	4	68	81	298	24	230	310	NO
	Through	800	34	4	25	39	318	10	293	330	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn										
36	Through	590	23	2	21	26	256	56	185	343	NO
	Right Turn	200	1	1	0	2	95	18	59	115	NO
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
LB	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn	400	44	4	39	52	258	43	199	335	NO
VVD	Through										
	Right Turn	1,200	81	31	56	165	399	299	256	1,241	NO
	Second Right										

CEQA Cumulative 3 Plus Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure with Lincoln 40 - Cumulative Conditions
AM Peak Hour
Signal

Intersection 8

Richards Blvd/I-80 EB Ramps

	1	Storage		Average	Queue (ft)			Maximum	Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
NB	U Turn										
	Second Left										
	Left Turn										
	Through	500	90	9	77	105	476	51	392	537	NO
	Right Turn	500	72	9	58	86	446	51	362	508	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn	360	29	2	26	32	170	15	158	205	NO
36	Through	1,300	14	1	13	15	189	27	142	224	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
EB	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
14/5	Left Turn	160	42	1	40	45	229	41	179	300	MAX
WB	Through										
	Right Turn	1,260	13	3	10	18	148	25	109	172	NO
	Second Right										

CEQA Cumulative 3 Plus Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure with Lincoln 40 - Cumulative Conditions
PM Peak Hour
Signal

Intersection 7

I-80 WB Ramps/Richards Blvd

		Storage		Average	Queue (ft)			Maximum	Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
NB	U Turn Second Left Left Turn Through Right Turn Second Right	800 800	91 10	4 2	85 6	97 14	313 260	5 39	310 191	327 320	NO NO
SB	U Turn Second Left Left Turn Through Right Turn Second Right	590 200	75 6	5 2	69 3	84 10	458 244	68 45	353 172	544 308	NO MAX
EB	U Turn Second Left Left Turn Through Right Turn Second Right										
WB	U Turn Second Left Left Turn Through Right Turn Second Right	400 1,200	31	5	23 17	40 27	184 156	47 22	137 117	284 194	NO NO

CEQA Cumulative 3 Plus Project
Richards Blvd - Olive Dr Circulation
Olive Dr Off-Ramp Closure with Lincoln 40 - Cumulative Conditions
PM Peak Hour

Intersection 8

I-80 EB Ramps/Richards Blvd

Signal

		Storage		_	Queue (ft)				Queue (ft)		Exceeds
Direction	Movement	(ft)	Average	Std. Dev.	Minimum	Maximum	Average	Std. Dev.	Minimum	Maximum	Storage?
	U Turn										
	Second Left										
NB	Left Turn										
	Through	500	128	14	105	145	472	39	415	540	NO
	Right Turn	500	105	13	83	122	443	39	385	510	NO
	Second Right										
	U Turn										
	Second Left										
SB	Left Turn	360	59	8	47	72	247	49	198	365	NO
35	Through	1,300	21	2	19	25	244	33	204	302	NO
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
EB	Left Turn										
LD	Through										
	Right Turn										
	Second Right										
	U Turn										
	Second Left										
WB	Left Turn	160	54	3	50	59	270	38	222	326	MAX
VVD	Through										
	Right Turn	1,260	10	2	7	13	124	22	90	161	NO
	Second Right										

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Old Davis Rd to Richards Bl CEQA Cumulative Plus Proje AM Peak Hour								
Flow Inputs and Adjustments									
Volume, V		5,929	vph						
Peak-hour factor, PHF		0.92							
Peak 15-min volume, v ₁₅		1,611	veh						
Trucks and buses		8.8%							
Recreational vehicles		0.0%							
Terrain type		Level							
Grade									
Length			mi						
Trucks and buses PCE, E _T		1.5							
Recreational vehicle PCE, E _R		1.2							
Heavy vehicle adjustment, f		0.958							
Driver popoulation factor, f	P	1.00	nanh						
Flow rate, v _p Number of lanes, N		6,728 3	pcph						
Number of lanes, iv		5							
	Speed Inputs	and Adjustments							
Lane width		12.0	ft						
Right-side lateral clearance		>6	ft						
Total ramp density, TRD		7.00	ramps/mi						
Lane width adjustment, f _{LW}		0.0	mph						
Lateral clearance adjustmer	nt, f _{ic}	0.0	mph						
TRD adjustment	, 10	16.5	mph						
Calculated free-flow speed,	FFS	58.9	mph						
Measured free-flow speed,	FFS		mph						
Free-flow speed curve		65	mph						
	Canacity Chacks for	Segments with Ramps							
	Capacity Checks 101	Jeginents with Namps							
	<u>Actual</u>	<u>Maximum</u>	Violation?						
Entering freeway volume	pcph	pcph							
Exiting freeway volume	pcph	pcph							
On-ramp volume	pcph	pcph							
Off-ramp volume	pcph	pcph							
	LOS and Perfo	rmance Measures							
Flow rate, v _p		2,243	pcphpl						
Average passenger-car spee		54.9	mph						
Volume-to-capacity ratio, v,	/C	0.95							
Density, D Level of service, LOS		40.8 E	pcpmpl						
Level of service, LOS		E							

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Richards Blvd t CEQA Cumulati AM Peak Hour	o Mace Blvd	ct			
	F	low Inputs a	nd Adjustments			
Volume, V				5,387	vph	
Peak-hour factor, PHF				0.92		
Peak 15-min volume, v ₁₅				1,464	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length					mi	
Trucks and buses PCE, E _T				1.5		
Recreational vehicle PCE, E	D.			1.2		
Heavy vehicle adjustment,	: -			0.958		
Driver popoulation factor, f				1.00		
Flow rate, v _p	r			6,113	pcph	
Number of lanes, N				3	p op.	
rumber of funes, it				J		
	S	peed Inputs a	nd Adjustments			
Lanca contatala				42.0	6.	
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				7.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustme	nt, f _{LC}			0.0	mph	
TRD adjustment				16.5	mph	
Calculated free-flow speed,				58.9	mph	
Measured free-flow speed,	FFS				mph	
Free-flow speed curve				65	mph	
	Canacit	v Checks for	Segments with R	amns		
	Capacit	., Checks for	Diricino With I			
	<u>Actual</u>		<u>Maximum</u>		Violation?	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
	1.0)C and Darfar	mance Measure	-		
	LC	anu Perior	mance ivieasure	>		
Flow rate, v _p				2,038	pcphpl	
Average passenger-car spec	ed, S			59.2	mph	
Volume-to-capacity ratio, v				0.87	·	
Density, D	-			34.4	pcpmpl	
Level of service, LOS				D		
•						

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-8 Mace Blvd to 0 CEQA Cumulat AM Peak Hour	Olive Drive ive Plus Proje	ct			
		Flow Inputs a	nd Adjustments			
Volume, V				6,314	vph	
Peak-hour factor, PHF				0.96		
Peak 15-min volume, v ₁₅				1,644	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length					mi	
Trucks and buses PCE, E_T				1.5		
Recreational vehicle PCE, E _F	t			1.2		
Heavy vehicle adjustment, f	: HV			0.958		
Driver popoulation factor, f	P			1.00		
Flow rate, v _p				6,866	pcph	
Number of lanes, N				3		
	S	peed Inputs a	and Adjustments	i		
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				10.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmen	nt f			0.0	mph	
TRD adjustment	ic, iLC			22.3	mph	
Calculated free-flow speed,	EEC			53.1	•	
Measured free-flow speed,				55.1	mph	
	FF3			CF	mph	
Free-flow speed curve				65	mph	
	Capaci	ty Checks for	Segments with I	Ramps		
	Actual		Maximum		Violation?	
Entoring frooway volume	ACLUAL	nenh	<u>Maximum</u>	nenh	<u>Violation?</u>	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
	LC	OS and Perfor	mance Measure	S		
Flow rate v				2 200	nenhal	
Flow rate, v _p	.d c			2,289	pcphpl	
Average passenger-car spee				53.8	mph	
Volume-to-capacity ratio, v,	<i>,</i> (0.97		
Density, D				42.5	pcpmpl	
Level of service, LOS				E		

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-8 Olive Dr to Ric CEQA Cumulat AM Peak Hour	hards Blvd ive Plus Proje	ct			
		Flow Inputs a	nd Adjustments			
Volume, V				6,149	vph	
Peak-hour factor, PHF				0.96		
Peak 15-min volume, v ₁₅				1,601	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length					mi	
Trucks and buses PCE, E_T				1.5		
Recreational vehicle PCE, E _F	-			1.2		
Heavy vehicle adjustment, f				0.958		
Driver popoulation factor, f	Р			1.00		
Flow rate, v _p				6,687	pcph	
Number of lanes, N				3		
	S	peed Inputs a	ınd Adjustments	3		
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				10.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmer	nt, f _{LC}			0.0	mph	
TRD adjustment				22.3	mph	
Calculated free-flow speed,				53.1	mph	
Measured free-flow speed,	FFS				mph	
Free-flow speed curve				65	mph	
	Capaci	ty Checks for	Segments with F	Ramps		
	_					
	<u>Actual</u>		<u>Maximum</u>		<u>Violation?</u>	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
	LC	OS and Perfor	mance Measure	S		
<u> </u>				2 222		
Flow rate, v _p				2,229	pcphpl	
Average passenger-car spee				55.3	mph	
Volume-to-capacity ratio, v,	/c			0.95		
Density, D				40.3	pcpmpl	
Level of service, LOS				E		

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-8 Richards Blvd I CEQA Cumulat AM Peak Hour	to Old Davis R ive Plus Proje				
		Flow Inputs a	nd Adjustments			
Volume, V				5,987	vph	
Peak-hour factor, PHF				0.96		
Peak 15-min volume, v ₁₅				1,559	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length					mi	
Trucks and buses PCE, E_T				1.5		
Recreational vehicle PCE, E _R				1.2		
Heavy vehicle adjustment, f				0.958		
Driver popoulation factor, f	Р			1.00		
Flow rate, v _p				6,511	pcph	
Number of lanes, N				4		
	S	speed Inputs a	ınd Adjustments	;		
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				10.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmer	it, t _{LC}			0.0	mph	
TRD adjustment				22.3	mph	
Calculated free-flow speed,				53.1	mph	
Measured free-flow speed,	FFS				mph	
Free-flow speed curve				65	mph	
	Capaci	ty Checks for	Segments with F	Ramps		
- · · · · ·	<u>Actual</u>	,	<u>Maximum</u>		<u>Violation?</u>	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
	LC	OS and Perfor	mance Measure	S		
				4.633		
Flow rate, v _p	-1.6			1,628	pcphpl	
Average passenger-car spee				64.3	mph	
Volume-to-capacity ratio, v,	/C			0.69		
Density, D				25.3	pcpmpl	
Level of service, LOS				С		

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Old Davis Rd to Richards Bl CEQA Cumulative Plus Proje PM Peak Hour								
Flow Inputs and Adjustments									
Volume, V		5,775	vph						
Peak-hour factor, PHF		0.92							
Peak 15-min volume, v ₁₅		1,569	veh						
Trucks and buses		8.8%							
Recreational vehicles		0.0%							
Terrain type		Level							
Grade									
Length		1 5	mi						
Trucks and buses PCE, E_T Recreational vehicle PCE, E_R		1.5 1.2							
Heavy vehicle adjustment, f		0.958							
Driver popoulation factor, f	: : :	1.00							
Flow rate, v_p	•	6,553	pcph						
Number of lanes, N		3							
	Speed Inputs a	and Adjustments							
Lane width		12.0	ft						
Right-side lateral clearance		>6	ft						
Total ramp density, TRD		7.00	ramps/mi						
Lane width adjustment, f_{LW}		0.0	mph						
Lateral clearance adjustmer	nt, f _{LC}	0.0	mph						
TRD adjustment		16.5	mph						
Calculated free-flow speed,		58.9	mph						
Measured free-flow speed,	FFS		mph						
Free-flow speed curve		65	mph						
	Capacity Checks for	Segments with Ramps							
	Actual	Maximum	Violation?						
Entering freeway volume	<u>Actual</u> pcph	<u>Maximum</u> pcph	<u>Violation?</u>						
Exiting freeway volume	pcph	pcph							
On-ramp volume	pcph	pcph							
Off-ramp volume	pcph	pcph							
·									
	LOS and Perfor	mance Measures	_						
Flow rate, v _p		2,184	pcphpl						
Average passenger-car spee		56.3	mph						
Volume-to-capacity ratio, v	c/c	0.93							
Density, D		38.8	pcpmpl						
Level of service, LOS		E							

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Eastbound I-80 Richards Blvd to M CEQA Cumulative PM Peak Hour		ct			
	Flow	v Inputs ar	nd Adjustments			
Volume, V				5,394	vph	
Peak-hour factor, PHF				0.92		
Peak 15-min volume, v ₁₅				1,466	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length					mi	
Trucks and buses PCE, E_T				1.5		
Recreational vehicle PCE, E				1.2		
Heavy vehicle adjustment,	•			0.958		
Driver popoulation factor, f				1.00		
Flow rate, v _p	r			6,121	pcph	
Number of lanes, N				3	рерп	
realiser of lanes, re				3		
	Spee	d Inputs a	nd Adjustments			
ما فام در در مراح ا				12.0	4.	
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				7.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmen	nt, f _{LC}			0.0	mph	
TRD adjustment				16.5	mph	
Calculated free-flow speed,				58.9	mph	
Measured free-flow speed,	FFS				mph	
Free-flow speed curve				65	mph	
	Canacity C	hecks for '	Segments with Ra	amns		
	Supucity C					
	<u>Actual</u>		<u>Maximum</u>		Violation?	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
	100 a	nd Dorfor	manaa Maasuras			
	LUS a	nu Periori	mance Measures			
Flow rate, v _p				2,040	pcphpl	
Average passenger-car spec	ed, S			59.2	mph	
Volume-to-capacity ratio, v				0.87	·	
Density, D				34.5	pcpmpl	
Level of service, LOS				D		
,						

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-8 Mace Blvd to C CEQA Cumulat PM Peak Hour	live Drive	ct			
	I	Flow Inputs ar	nd Adjustments	;		
Volume, V				5,658	vph	
Peak-hour factor, PHF				0.95		
Peak 15-min volume, v ₁₅				1,489	veh	
Trucks and buses				8.8%		
Recreational vehicles				0.0%		
Terrain type				Level		
Grade						
Length					mi	
Trucks and buses PCE, E _T				1.5		
Recreational vehicle PCE, E _R				1.2		
Heavy vehicle adjustment, f				0.958		
Driver popoulation factor, f	P			1.00		
Flow rate, v _p				6,218	pcph	
Number of lanes, N				3		
	S	peed Inputs a	nd Adjustment	s		
					6.	
Lane width				12.0	ft	
Right-side lateral clearance				>6	ft	
Total ramp density, TRD				10.00	ramps/mi	
Lane width adjustment, f _{LW}				0.0	mph	
Lateral clearance adjustmer	it, f _{LC}			0.0	mph	
TRD adjustment				22.3	mph	
Calculated free-flow speed,				53.1	mph	
Measured free-flow speed,	FFS				mph	
Free-flow speed curve				65	mph	
	Capacit	y Checks for S	Segments with	Ramps		
	<u>Actual</u>		Maximum		<u>Violation?</u>	
Entering freeway volume		pcph		pcph		
Exiting freeway volume		pcph		pcph		
On-ramp volume		pcph		pcph		
Off-ramp volume		pcph		pcph		
	LC	S and Perfori	mance Measure	es		
Flow rate, v _p				2,073	pcphpl	
Average passenger-car spee				58.6	mph	
Volume-to-capacity ratio, v,	/c			0.88		
Density, D				35.4	pcpmpl	
Level of service, LOS				E		

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-8 Olive Dr to Ricl CEQA Cumulat PM Peak Hour	hards Blvd ive Plus Proje	ct						
	ı	Flow Inputs a	nd Adjustments	i					
Volume, V				5,495	vph				
Peak-hour factor, PHF			0.95						
Peak 15-min volume, v ₁₅			1,446	veh					
Trucks and buses			8.8%						
Recreational vehicles			0.0%						
Terrain type				Level					
Grade									
Length			1 -	mi					
Trucks and buses PCE, E _T				1.5 1.2					
Recreational vehicle PCE, E _R				0.958					
Heavy vehicle adjustment, f_{HV} Driver popoulation factor, f_P			1.00						
Flow rate, v_p	P			6,039	pcph				
Number of lanes, N				3	рсрп				
Number of lattes, iv				3					
Speed Inputs and Adjustments									
المام و المام				12.0	£.				
Lane width				12.0	ft ft				
Right-side lateral clearance				>6 10.00					
Total ramp density, TRD			10.00 0.0	ramps/mi					
Lane width adjustment, f _{LW}				0.0	mph				
Lateral clearance adjustment, f _{LC}				22.3	mph				
TRD adjustment				53.1	mph				
Calculated free-flow speed, FFS				55.1	mph				
Measured free-flow speed, FFS Free-flow speed curve			65	mph					
Free-now speed curve				05	mph				
	Capaci	ty Checks for	Segments with	Ramps					
			N.4		Vii - 1 · · · · · · · · · · · · · · · · · ·				
Fataring fragments	<u>Actual</u>	وا دو و	<u>Maximum</u>	والمراجع	Violation?				
Entering freeway volume		pcph		pcph					
Exiting freeway volume		pcph		pcph					
On-ramp volume		pcph		pcph					
Off-ramp volume		pcph		pcph					
LOS and Performance Measures									
Flow rate v				2.012	nenhal				
Flow rate, v _p	.d c			2,013	pcphpl				
Average passenger-car speed, S Volume-to-capacity ratio, v/c				59.7 0.86	mph				
	<i>,</i> C			33.7	nenmal				
Density, D Level of service, LOS				33.7 D	pcpmpl				
LEVEL OF SELVICE, LOS				U					

Project Freeway Segment Alternative Time period	Lincoln 40 EIR Westbound I-80 Richards Blvd to Old Davis F CEQA Cumulative Plus Proje PM Peak Hour							
Flow Inputs and Adjustments								
Volume, V		6,234	vph					
Peak-hour factor, PHF		0.95						
Peak 15-min volume, v ₁₅		1,641	veh					
Trucks and buses		8.8%						
Recreational vehicles		0.0%						
Terrain type		Level						
Grade			:					
Length Trucks and buses PCE, E_T		1.5	mi					
Recreational vehicle PCE, E_R		1.2						
Heavy vehicle adjustment, f		0.958						
Driver popoulation factor, f		1.00						
Flow rate, v _p		6,851	pcph					
Number of lanes, N		4						
	Speed Inputs	and Adjustments						
	Speed inputs (and rajustinents						
Lane width		12.0	ft					
Right-side lateral clearance		>6	ft					
Total ramp density, TRD		10.00	ramps/mi					
Lane width adjustment, f_{LW}		0.0	mph					
Lateral clearance adjustmer	nt, f _{LC}	0.0	mph					
TRD adjustment		22.3	mph					
Calculated free-flow speed,		53.1	mph					
Measured free-flow speed,	FFS		mph					
Free-flow speed curve		65	mph					
Capacity Checks for Segments with Ramps								
Fataring fragresses	<u>Actual</u>	<u>Maximum</u>	Violation?					
Entering freeway volume	pcph	pcph						
Exiting freeway volume On-ramp volume	pcph pcph	pcph pcph						
Off-ramp volume	pcph	pcph						
on ramp volume	рорп	рорп						
	LOS and Perfor	mance Measures						
Flow rate, v _p		1,713	pcphpl					
Average passenger-car spee	d, S	63.6	mph					
Volume-to-capacity ratio, v		0.73	· ·					
Density, D		26.9	pcpmpl					
Level of service, LOS		D						