

APPENDIX P

FREEWAY VOLUME DEVELOPMENT WORKSHEETS

District	Route	Suf	County	PM Prefix	Postmile	Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak Month	Ahead AADT
8	30		SBD			SAN BERNARDINO COUNTY						
8	30		SBD		15.53	FONTANA, JUNIPER AVENUE				950	10000	9800
8	30		SBD		15.77	FONTANA, SIERRA AVENUE	950	10000	9800	1150	12300	12000
8	30		SBD		19.52	RIALTO, RIVERSIDE AVENUE	1850	19400	19000	2650	28000	27500
8	30		SBD		20.02	RIALTO, ACACIA AVENUE	2650	28000	27500	2700	28500	28000
8	30		SBD		21.77	SAN BERNARDINO, CALIFORNIA STREET	2700	28500	28000	3300	35000	34000
8	30		SBD		22	ROUTE 30 LEFT TURN AT HIGHLAND AVENUE; BEGIN FREEWAY	3300	35000	34000	2700	32000	30000
8	30		SBD	R	21.87	SAN BERNARDINO, JCT. RTE. 215	2700	32000	30000	4700	55000	52000
8	30		SBD	R	22.94	SAN BERNARDINO, H STREET	4700	55000	52000	4950	58000	55000
8	30		SBD	R	23.1	SAN BERNARDINO, NORTH JCT. RTE. 259	4950	58000	55000	9400	114000	110000
8	30		SBD	R	24.22	SAN BERNARDINO, JCT. RTE. 18 NORTH; WATERMAN AVENUE	9400	114000	110000	7800	96000	93000
8	30		SBD	R	25.72	DEL ROSA AVENUE	7800	96000	93000	6500	81000	78000
8	30		SBD	R	26.73	SAN BERNARDINO, HIGHLAND AVENUE	6500	81000	78000	5200	64000	62000
8	30		SBD	R	28.66	SAN BERNARDINO, JCT. RTE. 330	5200	64000	62000	5700	66000	63000
8	30		SBD	R	29.32	HIGHLAND, BASELINE STREET	5700	66000	63000	6200	72000	69000
8	30		SBD	R	30.23	HIGHLAND, FIFTH STREET	6200	72000	69000	7100	83000	79000
8	30		SBD	R	31.72	EAST OF THE SANTA ANA RIVER BRIDGE						
8	30		SBD	R	32.34	REDLANDS, SAN BERNARDINO AVENUE	7100	83000	79000	6400	75000	71000
8	30		SBD	R	33.16	REDLANDS, JCT. RTE. 10	6400	75000	71000			

DI	RTE	CO	PRE	PM CS	LEG	YR	Dir	1 WAY				AM PEAK				PM PEAK							
								PHV	%	K	D	%	K	D	%	PHV	%	K	D	%			
04	024	CC	R	6.257	543	B	03	W	8341	7.94	62.81	4.99	7	THU	OCT	E	8189	8.24	59.47	4.9	17	THU	OCT
05	025	SBT		35	170	O	02	S	88	14.45	77.19	11.15	10	SAT	FEB	N	102	14.96	86.44	12.93	17	SUN	FEB
05	025	SBT	L	52.23	166	B	04	N	799	8.57	58.49	5.01	12	SAT	FEB	N	863	5.89	91.81	5.41	18	TUE	AUG
05	025	SBT		51.45	164	A	04	N	1158	9.14	82.19	7.51	7	MON	FEB	S	1125	9.55	76.43	7.3	17	TUE	NOV
10	026	SJ		1.11	343	A	04	W	1472	11.49	79.1	9.09	7	THU	MAR	W	1215	10.2	73.5	7.5	14	WED	MAY
10	026	AMA		4.644	316	B	03	E	170	8.94	76.58	6.84	8	THU	OCT	W	166	9.18	72.81	6.68	18	MON	NOV
07	027	LA		0	777	A	03	S	1339	11.25	80.13	9.01	8	MON	JAN	N	1175	11.44	69.12	7.91	17	TUE	APR
07	027	LA		12.28	78	B	03	S	1547	7.79	56.63	4.41	7	WED	APR	S	1687	7.8	61.66	4.81	16	THU	MAR
07	027	LA		12.43	729	A	03	N	2099	7.6	51.25	3.9	12	SAT	APR	N	2316	7.97	53.92	4.3	16	FRI	OCT
07	027	LA		20.06	62	B	03	S	2981	9.58	66.11	6.33	7	FRI	OCT	N	2670	9.61	59.05	5.67	17	FRI	APR
03	028	PLA		5.81	160	B	03	E	649	12.59	53.02	6.68	12	TUE	AUG	E	766	13.74	57.38	7.88	16	THU	AUG
03	028	PLA		9.34	164	B	04	W	929	11.08	50.03	5.54	11	SAT	JUL	E	1008	11.4	52.72	6.01	16	TUE	JUL
03	028	PLA		9.34	165	A	04	W	1075	10.95	53.46	5.85	11	SUN	JUL	E	1165	11.87	53.44	6.34	13	SUN	JUL
04	029	SOL		5.955	323	O	02	N	1406	7.29	57.13	4.17	8	THU	SEP	S	1550	8.32	55.18	4.59	14	FRI	JUN
04	029	NAP		0	323	O	02	N	1406	7.29	57.13	4.17	8	THU	SEP	S	1550	8.32	55.18	4.59	14	FRI	JUN
04	029	NAP		.69	76	B	02	N	1554	7.9	59.45	4.7	8	THU	DEC	S	1538	8.24	56.4	4.65	17	FRI	DEC
04	029	NAP		4.706	7	B	02	N	1806	7.63	55.26	4.22	8	TUE	JUN	S	2164	9.34	54.1	5.05	18	FRI	JUN
04	029	NAP		4.706	8	A	02	S	2911	7.78	58.36	4.54	8	TUE	DEC	S	3261	8.42	60.41	5.09	17	THU	SEP
04	029	NAP	R	6.196	9	A	02	S	2049	8	59.07	4.72	8	WED	SEP	N	1993	7.85	58.53	4.59	18	TUE	DEC
04	029	NAP		10.31	411	A	03	N	2241	7.37	59.7	4.4	12	SAT	MAY	N	2278	8.47	52.83	4.47	16	THU	FEB
04	029	NAP		24.60	407	A	02	N	883	7.23	58.95	4.26	12	SAT	MAY	S	1160	9.27	60.39	5.6	17	FRI	NOV
04	029	NAP		37.90	81	A	02	S	263	7.63	72.65	5.54	8	THU	MAY	N	326	10.85	63.3	6.87	17	FRI	MAY
01	029	LAK		31.33	126	A	03	N	535	9.01	66.88	6.03	7	WED	OCT	S	504	9.23	61.54	5.68	17	THU	APR
01	029	LAK	R	40.22	250	A	03	N	719	8.13	62.85	5.11	7	TUE	APR	S	759	9.43	57.2	5.4	17	TUE	OCT
01	029	LAK		52.53	773	B	04	N	286	8.91	53.96	4.81	7	WED	NOV	S	316	10.29	51.63	5.31	17	WED	APR
07	030	LA		5.211	380	B	04	W	488	9.71	60.55	5.88	7	THU	OCT	E	541	10.44	62.4	6.51	16	TUE	JAN
07	030	LA		6.881	68	A	04	W	803	8.58	66.58	5.71	7	MON	APR	E	792	9.58	58.8	5.63	17	TUE	OCT
08	030	SBD	R	23.14	306	B	04	W	2671	8.76	58.28	5.11	7	MON	APR	E	2535	9.03	53.65	4.85	16	FRI	JAN
08	030	SBD	R	25.72	706	B	04	W	4373	8.11	57.59	4.67	7	THU	JAN	E	4199	8.37	53.56	4.48	16	MON	JAN
08	030	SBD	R	26.73	211	B	02	W	3205	8.35	55.54	4.64	7	TUE	APR	E	3230	8.45	55.35	4.67	16	WED	MAY
08	030	SBD	R	31.72	857	A	04	E	3883	8.49	57.5	4.88	7	WED	FEB	W	3744	8.98	52.42	4.71	16	WED	JAN
03	032	GLE		9.626	173	B	04	E	446	8.24	61.01	5.03	7	MON	MAR	W	478	8.94	60.28	5.39	17	MON	DEC
03	032	GLE		10.91	330	O	04	E	673	8.58	59.98	5.14	7	WED	SEP	W	755	10.41	55.43	5.77	16	FRI	SEP

Route	Route Suffix	District	County	Postmile Prefix	Postmile	Leg	AADT Total	Total Trucks	Total Truck %	2 Axle Volume	2 Axle Percent	3 Axle Volume	3 Axle Percent	4 Axle Volume	4 Axle Percent	5 Axle Volume	5 Axle Percent	Description	Year	Verify/E estimate
30		8	SBD		15.767	A	12000	1200	10	629	52.4	164	13.7	72	6	335	27.9	SIERRA AVENUE	87	E
30		8	SBD		15.767	B	9800	980	10	676	69	83	8.5	40	4.1	180	18.4	SIERRA AVENUE	87	E
30		8	SBD		19.521	A	27500	1898	6.9	1233	65	199	10.5	85	4.5	380	20	RIALTO, RIVERSIDE AVENUE	87	E
30		8	SBD		19.521	B	19000	2926	15.4	1088	37.2	301	10.3	20	0.7	1516	51.8	RIALTO, RIVERSIDE AVENUE	89	V
30		8	SBD		21.68	B	28000	1904	6.8	1245	65.4	171	9	36	1.9	451	23.7	CAJON BOULEVARD	92	V
30		8	SBD	R	23.095	B	55000	2970	5.4	2251	75.8	235	7.9	24	0.8	460	15.5	NORTH JCT. RTE. 259	91	E
30		8	SBD	R	23.095	A	110000	5280	4.8	3891	73.7	444	8.4	180	3.4	766	14.5	NORTH JCT. RTE. 259	91	E
30		8	SBD	R	24.215	B	110000	5280	4.8	3891	73.7	444	8.4	180	3.4	766	14.5	SAN BERNARDINO, JCT. RTE. 18 NORTH	91	E
30		8	SBD	R	24.215	A	93000	6510	7	5729	88	326	5	65	1	391	6	SAN BERNARDINO, JCT. RTE. 18 NORTH	83	V
30		8	SBD	R	28.664	B	62000	4340	7	3819	88	217	5	39	0.9	265	6.1	SAN BERNARDINO, JCT. RTE. 330	83	E
30		8	SBD	R	28.664	A	63000	3698	5.87	1835	49.62	456	12.33	145	3.92	1260	34.06	SAN BERNARDINO, JCT. RTE. 330	3	E
30		8	SBD	R	30.232	B	69000	3671	5.32	1808	49.24	453	12.33	186	5.06	1225	33.37	HIGHLAND, FIFTH STREET	4	E
30		8	SBD	R	30.232	A	79000	3674	4.65	1809	49.24	453	12.33	186	5.06	1226	33.37	HIGHLAND, FIFTH STREET	4	V
30		8	SBD	R	33.16	B	71000	3671	5.17	1807	49.24	453	12.33	186	5.06	1225	33.37	JCT. RTE. 10	4	E

**Table P-1
Existing (2004) SR-30 Freeway PCE Traffic Volumes**

A.M. Peak Hour										
Freeway Segment	Bidirectional Volume			Northbound ⁴			Southbound ⁴			
	Total Vehicles ¹	Truck % ²	Auto (Veh.)	Truck (Veh.)	Auto (Veh.)	Truck (Veh.)	Truck PCE ³	Auto (Veh.)	Truck (Veh.)	Truck PCE ³
State Route 30										
San Bernardino Ave to 5th Street	6,710	4.65%	6,398	312	2,719	133	200	3,679	179	269
Southern Ramp					607	70	105	979	63	95
Between 5th Street Ramps ⁵					2,112	63	95	2,700	116	174
Northern Ramp					267	10	15	265	17	26
5th Street to Base Line ⁵					2,379	73	110	2,965	133	200

P.M. Peak Hour										
Freeway Segment	Bidirectional Volume			Northbound ⁴			Southbound ⁴			
	Total Vehicles ¹	Truck % ²	Auto (Veh.)	Truck (Veh.)	Auto (Veh.)	Truck (Veh.)	Truck PCE ³	Auto (Veh.)	Truck (Veh.)	Truck PCE ³
State Route 30										
San Bernardino Ave to 5th Street	7,100	4.65%	6,770	330	3,547	173	260	3,223	157	236
Southern Ramp					725	68	102	663	21	32
Between 5th Street Ramps ⁵					2,822	105	158	2,560	136	204
Northern Ramp					214	7	11	249	21	32
5th Street to Base Line ⁵					3,036	112	168	2,809	157	236

¹ PM Peak hour count from Caltrans' 2004 Annual Average Daily Traffic volume data. Based on Caltrans' reported peak hour K-Factors, AM peak hour volume has been determined to be 94.5% of PM peak hour volume

² Total truck percentage from Caltrans' 2004 Annual Average Daily Truck Traffic volume Data.

³ Passenger Car Equivalent volume, using a PCE factor of 1.5 for all trucks, based on HCM.

⁴ Based on Caltrans data of 57.5% of total peak hour traffic in peak direction (Southbound) in the AM peak hour, and 52.4% of total peak hour traffic in the peak direction (Northbound) in the PM peak hour

⁵ Northbound and southbound peak hour data calculated by adding/subtracting on-ramp and off-ramp values, as appropriate

Table P-2
Year 2030 SR-30 Mainline Segment Passenger Vehicle Volumes

A.M. Peak Hour	Existing (2004) Pk. Hr. Volume	2000 Modeled Pk. Per. Volume	2030 Modeled Pk. Per. Volume	2000 to 2030		"New" Pk. Hr. Volume ¹	2030 Pk. Hr. Volume ²
				Pk. Per.	Pk. Hr.		
				Change	Change		
Northbound							
San Bernardino Avenue to 5th Street	2,719	3,046	9,149	6,103	2,320	2,010	4,729
Southern Ramp							1,095
Between 5th Street Ramps							3,634
Northern Ramp							301
5th Street to Base Line							3,935
Southbound							
San Bernardino Avenue to 5th Street	3,679	7,364	13,814	6,450	2,450	2,120	5,799
Southern Ramp							1,321
Between 5th Street Ramps							4,478
Northern Ramp							566
5th Street to Base Line							5,044

P.M. Peak Hour	Existing (2004) Pk. Hr. Volume	2000 Modeled Pk. Per. Volume	2030 Modeled Pk. Per. Volume	2000 to 2030		"New" Pk. Hr. Volume ¹	2030 Pk. Hr. Volume ²
				Pk. Per.	Pk. Hr.		
				Change	Change		
Northbound							
San Bernardino Avenue to 5th Street	3,547	10,807	19,938	9,131	2,560	2,220	5,767
Southern Ramp							1,165
Between 5th Street Ramps							4,602
Northern Ramp							384
5th Street to Base Line							4,986
Southbound							
San Bernardino Avenue to 5th Street	3,223	9,268	16,562	7,294	2,040	1,770	4,993
Southern Ramp							1,298
Between 5th Street Ramps							3,695
Northern Ramp							261
5th Street to Base Line							3,956

¹ Modeled 2000 to 2030 conditions represent 30 years of traffic growth. Since it is 26 years from 2004 (base count conditions) to 2030, the 'new peak hour volume' represents 86.67% (26/30) of the modeled growth.

² Northbound and Southbound peak hour data calculated by adding/subtracting on-ramp and off-ramp values, as appropriate

Table P-3
Conversion of 2030 Truck Volumes from PCEs to Vehicles

A.M. Peak Hour	2030 Ramp Volume¹ (SANBAG PCE)	2004 Average PCE based on SANBAG PCE	2030 Truck Volume (Vehicles)
Northbound			
Southern Ramp	207	2.6	80
Northern Ramp	92	2.1	44
Southbound			
Southern Ramp	242	2.6	93
Northern Ramp	148	2.2	67

P.M. Peak Hour	2030 Ramp Volume¹ (SANBAG PCE)	2004 Average PCE based on SANBAG PCE	2030 Truck Volume (Vehicles)
Northbound			
Southern Ramp	207	2.6	80
Northern Ramp	49	2.3	21
Southbound			
Southern Ramp	149	2.1	71
Northern Ramp	121	3	40

¹ Ramp volume taken from Year 2030 Background approach/departure volumes at Intersections 7 and 8 as applicable

**Table P-4
Year 2030 SR-30 Mainline Segment Truck Volumes**

A.M. Peak Hour	Existing (2004) Pk. Hr. Truck Vehicles	2000 Modeled Pk. Per. Trk. PCE Volume	2020 Modeled Pk. Per. Trk. PCE Volume	2000 to 2020		"New" Pk. Hr. Trk. PCE Volume ¹	"New" Pk. Hr. Truck Vehicles ²	2030 Pk. Hr. Truck Vehicles ³
				Pk. Per. Trk. PCE Change	Pk. Hr. Trk. PCE Change			
Northbound								
San Bernardino Avenue to 5th Street	133	802	2,354	1,552	510	660	308	441
Southern Ramp								80
Between 5th Street Ramps								361
Northern Ramp								44
5th Street to Base Line								405
Southbound								
San Bernardino Avenue to 5th Street	179	349	2,630	2,281	750	980	458	637
Southern Ramp								93
Between 5th Street Ramps								544
Northern Ramp								67
5th Street to Base Line								611

P.M. Peak Hour	Existing (2004) Pk. Hr. Truck Vehicles	2000 Modeled Pk. Per. Trk. PCE Volume	2020 Modeled Pk. Per. Trk. PCE Volume	2000 to 2020		"New" Pk. Hr. Trk. PCE Volume ¹	"New" Pk. Hr. Truck Vehicles ²	2030 Pk. Hr. Truck Vehicles ³
				Pk. Per. Trk. PCE Change	Pk. Hr. Trk. PCE Change			
Northbound								
San Bernardino Avenue to 5th Street	173	491	3,264	2,773	690	900	421	594
Southern Ramp								80
Between 5th Street Ramps								514
Northern Ramp								21
5th Street to Base Line								535
Southbound								
San Bernardino Avenue to 5th Street	157	891	2,961	2,070	520	680	318	475
Southern Ramp								71
Between 5th Street Ramps								404
Northern Ramp								40
5th Street to Base Line								444

¹ Modeled 2000 to 2020 conditions represent 20 years of traffic growth. Since it is 26 years from 2004 (base count conditions) to 2030, the 'new peak hour volume' represents 130% of the modeled growth.

² Trucks converted from SANBAG PCE to vehicles based on existing average SANBAG PCE (2.14) on freeway as calculated from 2004 Caltrans counts

³ Northbound and Southbound peak hour data calculated by adding/subtracting on-ramp and off-ramp values, as appropriate