LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

TDM PHASE II PROGRAM

PART II

IMPACTS OF INDIVIDUAL MEASURES

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GENERAL ASSUMPTIONS AND DEFINITIONS

- Total cost includes: public sector, individual, private sector, air pollution, and congestion costs
- Total benefit includes: public sector, individual, private sector, air pollution, and congestion benefits
- Unit of measurements for cost-benefit analyses are based upon the transportation and emission models
- Emission factors are based upon *EMFAC7F*
- Input for the emission model is the output from the transportation model
- Vehicles equipped with catalytic converter is 85.86% of all vehicles
- Vehicles not equipped with catalytic converter is 12.14% of all vehicles
- Vehicles operated on diesel is 2% of all vehicles
- Trips taken by vehicles equipped with catalytic converter is 91.04% of all trips
- Trips taken by vehicles not equipped with catalytic converter is 6.78% of all trips
- Trips taken by diesel operated vehicles is 2.18% of all trips
- For home-to-work (H-W) trips, cold start is assumed to be 100%
- For work-to-other (W-O) trips, cold starts are assumed to be 75%, and hot starts is 25%
- Pollutants temperatures for Los Angeles County were selected using worst-case scenario, based upon the ten highest exceedance days experienced in the County. The lowest temperature of 60F was selected for carbon monoxide (C0) and 75F for Oxides of Nitrogen (NO_X), because of high CO and NO_X emissions resulting from incomplete combustion at lower temperatures. Temperature for Reactive Organic Compounds (ROC) was assumed to be 85F.
- Peak period speed in Los Angeles County is assumed to be 23.84 Miles per hour
- Off-peak period speed in Los Angeles County is assumed to be 34.3 Miles per hour

INDIVIDUAL TCM MEASURES

TCM #1 (Trip reduction program for small employers)

DESCRIPTION OF MEASURE:

- Formal trip reduction program for commuters working for employers with 25-99 employees (922,562 employees).

Assumptions:

- Basic formal trip reduction program implemented with marketing and promotional incentives with goal of increasing average vehicle ridership
- Likely outcomes presented represent range of net vehicle trips reduced adjusted for current non-SOV commuters and others who travel by car to and from a common point to rideshare or use transit as part of the program.
- Low end range reflects basic program only (i.e., minimal promotion, encouragement to rideshare)
- High end range reflects aggressive marketing, rideshare matching, and financial incentives

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	10,652	20,794	6,391	12,476	17,044	33,270
Daily VMT reduction	145,729	284,462	87,437	170,677	233,166	455,140
Daily CO reduction (Tons/Day)	3.466	6.766	1.616	3.155	5.082	9.921
Daily NOx reduction (Tons/Day)	0.169	0.330	0.116	0.226	0.285	0.555
Daily ROG reduction (Tons/Day)	0.339	0.662	0.171	0.334	0.510	0.996
Daily PM reduction (Tons/Day)	0.003	0.006	0.002	0.004	0.005	0.010
Daily tire wear reduction (Tons/Day)	0.032	0.063	0.019	0.038	0.051	0.100

Costs and Benefits of TCM #1

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 27,492**	**$ 53,665**	**$730,070**	**$ 730,070**	**$ 26,740**	**$ 34,820**	**0**	**0**
Daily cost per trip reduced	$ 1.61	$ 1.61	$ 42.83	$ 21.94	$ 1.57	$ 1.05	n/a	n/a
Daily cost per VMT reduced	$ 0.12	$ 0.12	$ 3.13	$ 1.60	$ 0.11	$ 0.08	n/a	n/a
Daily cost per Ton of CO reduced	$ 5410	$ 5409	$ 143,658	$ 73,588	$ 5,262	$ 3,510	n/a	n/a
Daily cost per Ton of ROG reduced	$ 53,907	$ 53,881	$ 1,431,510	$ 733,002	$ 52,431	$ 34,960	n/a	n/a
Daily cost per Ton of NOx reduced	$ 96,464	$ 96,520	$ 2,561,649	$ 1,313,075	$ 93,823	$ 62,626	n/a	n/a
Daily cost per ton of PM reduced	$ 5,498,465	$ 5,366,503	$ 146,013,986	$ 73,006,993	$ 5,347,932	$ 3,482,021	n/a	n/a
Total daily benefit	$ 16,495	$ 32,199	$ 14,160	$ 27,640	$ 105,459	$ 188,482	$ 3,497	$ 6,827
Daily benefit per trip reduced	$ 0.97	$ 0.97	$ 0.83	$ 0.83	$ 6.19	$ 5.67	n/a	n/a
Daily benefit per VMT reduced	$ 0.07	$ 0.07	$ 0.06	$ 0.06	$ 0.45	$ 0.41	n/a	n/a
Daily benefit per Ton of CO reduced	$ 3246	$ 3246	$ 2,786	$ 2,786	$ 20,752	$ 18,998	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 32,344	$ 32,329	$ 27,763	$ 27,751	$ 206,783	$ 189,239	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 57,879	$ 57,912	$ 49,683	$ 49,712	$ 370,033	$ 338,996	n/a	n/a
Daily benefit per Ton of PM reduced	$ 3,299,079	$ 3,219,902	$ 2,831,926	$ 2,763,969	$ 21,091,894	$ 18,848,179	n/a	n/a
Total daily cost-benefit	$ 10,997	$ 21,466	$ 715,910	$ 702,430	$ -78,720	$ -153,662	$ -3,497	$ -6,827
Daily cost-benefit per trip reduced	$ 0.65	$ 0.65	$ 42.00	$ 21.11	$ -4.62	$ -4.62	n/a	n/a
Daily cost-benefit per VMT reduced	$ 0.05	$ 0.05	$ 3.07	$ 1.54	$ -0.34	$ -0.34	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ 2164	$ 2,164	$ 140,872	$ 70,802	$ -15,490	$ -15,489	n/a	n/a
Daily cost-benefit per Ton of ROG	21563	$ 21,552	$ 1,403,746	$ 705,251	$ -154,353	$ -154,279	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ 38,586	$ 38,608	$ 2,511,966	$ 1,263,364	$ -276,210	$ -276,370	n/a	n/a
Daily cost-benefit per Ton of PM reduced	$ 2,199,386	$ 2,146601	$ 143,182,060	$ 70,243,024	$ -15,743,962	$ -15,366,159	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #1

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
TOTAL DAILY COST	**$ 118,190**	**$ 230,708**	**$ 125,196**	**$ 244,384**	**$ 794,806**	**$ 355,201**
Net daily cost per trip reduced	$ 6.93	$ 6.93	$ 7.35	$ 7.35	$ 46.63	$ 25.22
Net daily cost per VMT reduced	$ 0.51	$ 0.51	$ 0.54	$ 0.54	$ 3.41	$ 1.84
Net daily cost per Ton of CO reduced	$ 23,257	$ 23,254	$ 24,635	$ 24,633	$ 156,396	$ 84,574
Net daily cost per Ton of ROG reduced	$ 231,745	$ 231,634	$ 245,483	$ 245,365	$ 1,558,443	$ 842,428
Net daily cost per Ton of NOx reduced	$ 414,702	$ 414,942	$ 439,286	$ 439,540	$ 2,788,792	$ 1,509,098
Net daily cost per Ton of PM reduced	$ 23,638,010	$ 23,070,764	$ 25,039,280	$ 24,438,399	$ 158,961,151	$ 83,905,862
TOTAL DAILY BENEFIT	**$ 7,006**	**$ 13,676**	**0**	**0**	**$ 146,618**	**$ 268,824**
Net daily benefit per trip reduced	$ 0.41	$ 0.41	0	0	$ 8.60	$ 8.08
Net daily benefit per VMT reduced	$ 0.003	$ 0.003	0	0	$ 0.63	$ 0.59
Net daily benefit per Ton of CO reduced	$ 1,379	$ 1,379	0	0	$ 28,851	$ 27,096
Net daily benefit per Ton of ROG reduced	$ 13,738	$ 13,731	0	0	$ 287,487	$ 269,904
Net daily benefit per Ton of NOx reduced	$ 24,584	$ 24,598	0	0	$ 514,450	$ 483,496
Net daily benefit per Ton of PM reduced	$ 1,401,270	$ 1,367,635	0	0	$ 29,323,667	$ 26,882,395
TOTAL DAILY COST-BENEFIT	**$ 111,184**	**$ 217,031**	**$ 111,184**	**$ 217,031**	**$ 648,187**	**$ 570,235**
Net daily cost-benefit per trip reduced	$ 6.52	$ 6.52	$ 7.35	$ 7.35	$ 38.03	$ 17.14
Net daily cost-benefit per VMT reduced	$ 0.48	$ 0.48	$ 0.54	$ 0.54	$ 2.78	$ 1.25
Net daily cost-benefit per Ton of CO reduced	$ 21,878	$ 21,876	$ 24,635	$ 24,633	$ 127,546	$ 57,478
Net daily cost-benefit per Ton of ROG reduced	$ 218,007	$ 217,903	$ 245,483	$ 245,635	$ 1,270,956	$ 572,525
Net daily cost-benefit per Ton of NOx reduced	$ 390,118	$ 390,344	$ 439,286	$ 439,540	$ 2,274,342	$ 1,025,602
Net daily cost-benefit per Ton of PM reduced	$ 22,236,740	$ 21,703,129	$ 25,039,280	$ 24,438,399	$ 129,637,484	$ 57,023,467

TCM #2 (Compressed work week)

DESCRIPTION OF MEASURE:

- Implementation of a compressed work week where an employee works fewer days in each week but more hours each working day.

Assumptions:

- 20% of all employees affected (922,562 employees).
- Participation rate ranges from 2 to 4% of those affected.
- Participating employees work on average four days per week.
- Some additional non-commute trips are created.
- Likely outcomes presented represent range of net vehicle trips reduced adjusted for additional non-commute trips.
- Low end range reflects standard participation rates (2% of those affected).
- High end range reflects high participation rate (4% of those affected).

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	1,917	3,834	1,150	2,300	3,067	6,134
Daily VMT reduction	21,852	43,704	13,111	26,222	34,963	69,926
Daily CO reduction (Tons/Day)	0.577	1.155	0.269	0.538	0.847	1.693
Daily NOx reduction (Tons/Day)	0.027	0.053	0.018	0.036	0.045	0.090
Daily ROG reduction (Tons/Day)	0.054	0.108	0.027	0.055	0.082	0.163
Daily PM reduction (Tons/Day)	0.000	0.001	0.000	0.001	0.001	0.002
Daily tire wear reduction (Tons/Day)	0.005	0.010	0.003	0.006	0.008	0.015

Costs and Benefits of TCM #2

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 0	0	0	0	$ 3,000	$ 3,000	0	0
Daily cost per trip reduced	0	0	$ 0.02	$ 0.02	$ 0.98	$ 0.49	n/a	n/a
Daily cost per VMT reduced	0	0	0	0	$ 0.09	$ 0.04	n/a	n/a
Daily cost per Ton of CO reduced	0	0	$ 70	$ 70	$ 3,546	$ 1,772	n/a	n/a
Daily cost per Ton of ROG reduced	0	0	$ 728	$ 724	$ 37,037	$ 18,405	n/a	n/a
Daily cost per Ton of NOx reduced	0	0	$ 1,310	$ 1,325	$ 66,667	$ 33,708	n/a	n/a
Daily cost per ton of PM reduced	0	0	ERR	$ 58,971	ERR	$1,500,000	n/a	n/a
Total daily benefit	$4,240	$ 8,481	$ 6,368	$ 12,738	0	0	$ 1,575	$ 3,150
Daily benefit per trip reduced	$ 1.38	$ 1.38	$ 2.08	$ 2.08	0	0	n/a	n/a
Daily benefit per VMT reduced	$ 0.12	$ 0.12	$ 0.18	$ 0.18	0	0	n/a	n/a
Daily benefit per Ton of CO reduced	$ 5012	$ 5009	$ 7,527	$ 3,761	0	0	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 52,348	$ 52,028	$ 78,615	$ 39,067	0	0	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 94,227	$ 95,288	ERR	ERR	0	0	n/a	n/a
Daily benefit per Ton of PM reduced	ERR	$ 4,240,315	ERR	0	0	0	n/a	n/a
Total daily cost-benefit	$ -4,240	$ -8,481	$ -6,309	$ -12,620	$ 3,000	$ 3,000	-1,575	-1,575
Daily cost-benefit per trip reduced	$ -1.38	$ -1.38	$ -2.06	$ -2.06	$ 0.98	$ 0.49	n/a	n/a
Daily cost-benefit per VMT reduced	$ -0.12	$ -0.12	$ -0.18	$ -0.18	$ 0.09	$ 0.04	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ -5012	$ -5009	$ -7,457	$ -7,454	$ 3,546	$ 1,772	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ -52,348	$ -52,029	$ -77,887	$ -77,422	$ 37,037	$ 18,405	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ -94,227	$ -95,288	$ -140,197	$ -141,796	$ 66,667	$ 33,708	n/a	n/a
Daily cost-benefit per Ton of PM reduced	ERR	$ -4,240,315	ERR	$ -6,309,913	ERR	$ 1,500,000	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM # 2

Costs and Benefits	Scenario #1 (The Build Scenario) Short-Term		Scenario #1 (The Build Scenario) Long-Term		Scenario #2 (No Build)	
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 11,132**	**$ 22,267**	**$ 12,183**	**$ 24,368**	**$ 3,059**	**$ 3,118**
Net daily cost per trip reduced	$ 3.63	$ 3.63	$ 3.97	$ 3.97	$ 1.00	$ 0.51
Net daily cost per VMT reduced	$ 0.32	$ 0.32	$ 0.35	$ 0.35	$ 0.09	$ 0.04
Net daily cost per Ton of CO reduced	$ 13,159	$ 13,153	$ 14,401	$ 14,394	$ 3,616	$ 1,842
Net daily cost per Ton of ROG reduced	$ 137,438	$ 136,609	$ 150,408	$ 149,500	$ 37,765	$ 19,128
Net daily cost per Ton of NOx reduced	$ 247,389	$ 250,194	$ 270,734	$ 273,803	$ 67,977	$ 35,033
Net daily cost per Ton of PM reduced	ERR	$ 11,133,645	ERR	$ 12,184,220	ERR	$ 1,558,971
Total daily benefit	**$ 1,051**	**$ 2,101**	**0**	**0**	**$ 12,183**	**$ 24,368**
Net daily benefit per trip reduced	$ 0.34	$ 0.34	0	0	$ 3.97	$ 3.97
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 0.35	$ 0.35
Net daily benefit per Ton of CO reduced	$ 1,242	$ 1,241	0	0	$ 14,401	$ 14,394
Net daily benefit per Ton of ROG reduced	$ 12,970	$ 12,890	0	0	$ 150,408	$ 149,500
Net daily benefit per Ton of NOx reduced	$ 23,346	$ 23,608	0	0	$ 270,734	$ 273,803
Net daily benefit per Ton of PM reduced	ERR	$ 1,050,575	0	0	ERR	$ 12,184,220
Total daily cost-benefit	**$ 10,082**	**$ 20,166**	**$ 12,183**	**$ 24,368**	**$ -9,124**	**$ -21,250**
Net daily cost-benefit per trip reduced	$ 3.29	$ 3.29	$ 3.97	$ 3.97	$ -2.98	$ -3.46
Net daily cost-benefit per VMT reduced	$ 0.29	$ 0.29	$ 0.35	$ 0.35	$ -0.26	$ -0.30
Net daily cost-benefit per Ton of CO reduced	$ 11,917	$ 11,911	$ 14,401	$ 14,394	$ -10,785	$ -12,552
Net daily cost-benefit per Ton of ROG reduced	$ 124,468	$ 123,719	$ 150,408	$ 149,500	$ -112,643	$ -130,371
Net daily cost-benefit per Ton of NOx reduced	$ 224,043	$ 226,586	$ 270,734	$ 273,803	$ -202,757	$ -238,769
Net daily cost-benefit per Ton of PM reduced	ERR	$ 10,083,070	ERR	$ 12,184,220	ERR	$ -10,625,249

TCM # 3 (Telecommuting)

DESCRIPTION OF MEASURE:

- Telecommuting program where employees work at home or a satellite work center near home.

Assumptions:

- 20% of all employees affected (922,562 employees)
- Only non-Regulation XV affected employees participate.
- Likely outcomes presented represent range of net vehicle trips adjusted for travel to a satellite work center
- Low end range reflects standard participation rates
- High end range reflects higher participation rate than historically experienced

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	1,111	2,222	667	1,333	1,778	3,556
Daily VMT reduction	9,500	19,001	5,700	11,401	15,201	30,402
Daily CO reduction (Tons/Day)	0.301	0.602	0.140	0.281	0.442	0.883
Daily NOx reduction (Tons/Day)	0.013	0.026	0.009	0.017	0.021	0.043
Daily ROG reduction (Tons/Day)	0.026	0.053	0.013	0.027	0.040	0.080
Daily PM reduction (Tons/Day)	0.000	0.000	0.000	0.000	0.000	0.001
Daily tire wear reduction (Tons/Day)	0.002	0.004	0.001	0.003	0.003	0.007

Costs and Benefits of TCM #3

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	0	0	$ 1,743	$ 3,487	$ 2,000	$ 2,000	0	0
Daily cost per trip reduced	0	0	$ 0.98	$ 0.98	$ 1.13	4 0.56	n/a	n/a
Daily cost per VMT reduced	0	0	$ 0.11	$ 0.11	$ 0.13	$ 0.07	n/a	n/a
Daily cost per Ton of CO reduced	0	0	$ 3,952	$ 3,949	$ 4,535	$ 2,265	n/a	n/a
Daily cost per Ton of ROG reduced	0	0	$ 44,688	$ 43,583	$ 51,282	$ 25,000	n/a	n/a
Daily cost per Ton of NOx reduced	0	0	$ 79,219	$ 81,085	$ 90,909	$ 46,512	n/a	n/a
Daily cost per ton of PM reduced	err	ERR	ERR	ERR	ERR	ERR	n/a	n/a
Total daily benefit	$ 1,946	$ 3,892	$ 3,691	$ 7,383	0	0	$ 685	$ 1,369
Daily benefit per trip reduced	$ 1.10	$ 1.09	$ 2.08	$ 2.08	0	0	n/a	n/a
Daily benefit per VMT reduced	$ 0.13	$ 0.13	0.24	0.24	0	0	n/a	n/a
Daily benefit per Ton of CO reduced	$ 4,412	$ 4,408	8,369	$ 8,362	0	0	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 49,894	$ 48,651	$ 94,633	$ 92,293	0	0	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 88,449	$ 90,514	$ 167,759	$ 171,708	0	0	n/a	n/a
Daily benefit per Ton of PM reduced	ERR	ERR	ERR	ERR	ERR	ERR	n/a	n/a
Total daily cost-benefit	$ -1,946	$ -3,892	$ -1,948	$ -3,897	$ 2,000	$ 2,000	$ -685	$ -1,369
Daily cost-benefit per trip reduced	$ -1.10	$ -1.09	$ -1.10	$ -1.10	$ 1.13	$ 0.56	n/a	n/a
Daily cost-benefit per VMT reduced	$ -0.13	$ -0.13	$ -0.13	$ -0.13	$ 0.13	$ 0.07	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ -4,412	$ -4,408	$ -4,417	$ -4,413	$ 4,535	$ 2,265	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ -49,894	$ -48,651	$ -49,945	$ -48,710	$ 51,282	$ 25,000	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ -88,449	$ -90,514	$ -88,539	$ -90,624	$ 90,909	$ 46,512	n/a	n/a
Daily cost-benefit per Ton of PM reduced	ERR	ERR	ERR	ERR	ERR	ERR	n/a	n/a

Short-Term and Long-Term Totasl Costs and Benefits of TCM #3

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 5,865**	**$ 11,732**	**$ 6,321**	**$ 12,645**	**$ 3,743**	**$ 5,487**
Net daily cost per trip reduced	$ 3.30	$ 3.30	$ 3.56	$ 3.56	$ 2.11	$ 1.54
Net daily cost per VMT reduced	$ 0.39	$ 0.39	$ 0.42	$ 0.42	$ 0.25	$ 0.18
Net daily cost per Ton of CO reduced	$ 13,298	$ 13,286	$ 14,334	$ 14,321	$ 8487	$ 6214
Net daily cost per Ton of ROG reduced	$ 150,374	$ 146,645	$ 162,085	$ 158,063	$ 95,970	$ 65,583
Net daily cost per Ton of NOx reduced	$ 266,572	$ 272,827	$ 287,333	$ 294,071	$ 170,128	$ 127,596
Net daily cost per Ton of PM reduced	ERR	ERR	ERR	ERR	ERR	ERR
Total daily benefit	**$ 457**	**$ 913**	**0**	**0**	**$ 6,321**	**$ 12,645**
Net daily benefit per trip reduced	$ 0.26	$ 0.26	0	0	$ 3.56	$ 3.56
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 0.42	$ 0.42
Net daily benefit per Ton of CO reduced	$ 1,036	$ 1,035	0	0	$ 14,334	$ 14,321
Net daily benefit per Ton of ROG reduced	$ 11,711	$ 11,419	0	0	$ 162,085	$ 158,063
Net daily benefit per Ton of NOx reduced	$ 20,761	$ 21,244	0	0	$ 287,333	$ 294,071
Net daily benefit per Ton of PM reduced	ERR	ERR	ERR	ERR	ERR	ERR
Total daily cost-benefit	**$ 5,408**	**$ 10,818**	**$ 6,321**	**$ 12,645**	**$ -2,578**	**$ -7,158**
Net daily cost-benefit per trip reduced	$ 3.04	$ 3.04	$ 3.56	$ 3.56	$ -1.45	$ -2.01
Net daily cost-benefit per VMT reduced	$ 0.36	$ 0.36	$ 0.42	$ 0.42	$ -0.17	$ -0.24
Net daily cost-benefit per Ton of CO reduced	$ 12,263	$ 12,252	$ 14,334	$ 14,321	$ -5,847	$ -8,107
Net daily cost-benefit per Ton of ROG reduced	$ 138,662	$ 135,226	$ 162,085	$ 158,063	$ -66,115	$ -89,480
Net daily cost-benefit per Ton of NOx reduced	$ 245,811	$ 251,584	$ 287,333	$ 294,071	$ -117,204	$ -166,485
Net daily cost-benefit per Ton of PM reduced	ERR	ERR	ERR	ERR	ERR	ERR

TCM #4 (Staggered and flexible hours)

DESCRIPTION OF MEASURE:

- Portion of employees select to or are assigned arrival and departure times at work that are outside the peak periods.

Assumptions:

- 3%-5% of employees in Los Angeles County are targeted to participate in this program.
- This TCM strategy does not affect the total trips or total VMT. Instead, it shifts the trips from peak to off-peak period which will effect the speed and in turn affect mobility and air quality.
- Likely outcome presented represent total trips shifted from the peak period to the off-peak period and its effect on speeds
- Low end range reflect 3% employees participating
- high end range reflect 5% employees participating

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	74,876	124,794	74,876	124,794	0	0
Daily VMT reduction	853,591	1,422,652	853,591	1,422,652	0	0
Daily CO reduction (Tons/Day)	1.985	3.309	0	0	1.985	3.309
Daily NOx reduction (Tons/Day)	0.000	0.000	0.000	0.000	0.000	0.000
Daily ROG reduction (Tons/Day)	0.245	0.408	0.000	0.000	0.245	0.408
Daily PM reduction (Tons/Day)	0.000	0.000	0.000	0.000	0.000	0.000
Daily tire wear reduction (Tons/Day)	0.000	0.000	0.000	0.000	0.000	0.000

Costs and Benefits of TCM #4

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	0	0	$ 5,322	$ 8,869	$ 4,435	$ 4,435	0	0
Daily cost per trip reduced	0	0	$ 0.07	$ 0.07	$ 0.06	$ 0.04	N/A	N/A
Daily cost per VMT reduced	0	0	$ 0.01	$ 0.01	$ 0.01	$ 0.00	n/a	n/a
Daily cost per Ton of CO reduced	0	0	$ 2,681	$ 2680	$ 2,234	$ 1,340	n/a	n/a
Daily cost per Ton of ROG reduced	0	0	$ 21,721	$ 21,738	$ 18,100	$ 10,869	n/a	n/a
Daily cost per Ton of NOx reduced	0	0	ERR	ERR	ERR	ERR	n/a	n/a
Daily cost per ton of PM reduced	0	0	ERR	ERR	ERR	ERR	n/a	n/a
Total daily benefit	0	0	0	0	0	0	$ 53,843	$ 89,738
Daily benefit per trip reduced	0	0	0	0	0	0	n/a	n/a
Daily benefit per VMT reduced	0	0	0	0	0	0	n/a	n/a
Daily benefit per Ton of CO reduced	0	0	0	0	0	0	n/a	n/a
Daily benefit per Ton of ROG reduced	0	0	0	0	0	0	n/a	n/a
Daily benefit per Ton of NOx reduced	0	0	ERR	ERR	ERR	ERR	n/a	n/a
Daily benefit per ton of PM reduced	0	0	ERR	ERR	ERR	ERR	n/a	n/a
Total daily cost-benefit-benefit	0	0	$ 5,322	$ 8,869	$ 4,435	$ 4,435	$ -53,843	$ -89,738
Daily cost-benefit per trip reduced	0	0	$ 0.07	$ 0.07	$ 0.06	$ 0.04	n/a	n/a
Daily cost-benefit per VMT reduced	0	0	$ 0.01	$ 0.01	$ 0.01	$ 0.00	n/a	n/a
Daily cost-benefit per Ton of CO reduced	0	0	$ 2,681	$ 2,680	$ 2,234	$ 1,340	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	0	0	$ 21,721	$ 21,738	$ 18,100	$ 10,869	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	0	0	ERR	ERR	ERR	ERR	n/a	n/a
Daily cost-benefit per Ton of PM reduced	0	0	ERR	ERR	ERR	ERR	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #4

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 686,688**	**$ 1,144,486**	**$ 727,727**	**$ 1,212,884**	**$ 9,756**	**$ 13,304**
Net daily cost per trip reduced	$ 9.17	$ 9.17	$ 9.72	$ 9.72	$ 0.13	$ 0.11
Net daily cost per VMT reduced	$ 0.80	$ 0.80	$ 0.85	$ 0.85	$ 0.01	$ 0.01
Net daily cost per Ton of CO reduced	$ 345,938	$ 345,871	$ 366,613	$ 366,541	$ 4915	$ 4021
Net daily cost per Ton of ROG reduced	$ 2,802,808	$ 2,805,112	$ 2,970,313	$ 2,972,755	$ 39,821	$ 32,607
Net daily cost per Ton of NOx reduced	ERR	ERR	ERR	ERR	ERR	ERR
Net daily cost per Ton of PM reduced	ERR	ERR	ERR	ERR	ERR	ERR
Total daily benefit	**$ 41,039**	**$ 68,398**	**0**	**0**	**$ 53,843**	**$ 89,738**
Net daily benefit per trip reduced	$ 0.55	$ 0.55	0	0	$ 0.72	$ 0.72
Net daily benefit per VMT reduced	$ 0.05	$ 0.05	0	0	$ 0.06	$ 0.06
Net daily benefit per Ton of CO reduced	$ 20,675	$ 20,670	0	0	$ 27,125	$ 27,119
Net daily benefit per Ton of ROG reduced	$ 167,506	$ 167,642	0	0	$ 219,766	$ 219,946
Net daily benefit per Ton of NOx reduced	ERR	ERR	ERR	ERR	ERR	ERR
Net daily benefit per Ton of PM reduced	ERR	ERR	ERR	ERR	ERR	ERR
Total daily cost-benefit	**$ 645,649**	**$ 1,076,088**	**$ 727,727**	**$ 1,212,884**	**$ -44,087**	**$ -76,434**
Net daily cost-benefit per trip reduced	$ 8.62	$ 8.62	$ 9.72	$ 9.72	$ -0.59	$ -0.61
Net daily cost-benefit per VMT reduced	$ 0.76	$ 0.76	$ 0.85	$ 0.85	$ -0.05	$ -0.05
Net daily cost-benefit per Ton of CO reduced	$ 325,264	$ 325,200	$ 366,613	$ 366,541	$ -22,210	$ -23,100
Net daily cost-benefit per Ton of ROG	$ 2,635,302	$ 2,637,470	$ 2,970,313	$ 2,972,755	$ -179,945	$ -187,338
Net daily cost-benefit per Ton of NOx	ERR	ERR	ERR	ERR	ERR	ERR
Net daily cost-benefit per Ton of PM reduced	ERR	ERR	ERR	ERR	ERR	ERR

TCM #5 (Form new TMAs)

DESCRIPTION OF MEASURE:

- Form new TMAs/TMOs or expand the representations of the present ones to serve all major employers in Los Angeles County

Assumptions:

- 1,500 (24%) employers with 100 or more employees in Los Angeles are not included in any TMAs/TMOs. 6.5% (300,000 employees) are affected by this measure
- The former mode share of new ridesharers and transit riders is assumed to be similar to those former elsewhere in the SCAB region.
- Likely outcomes presented represent range of net vehicle trip reduced adjusted for former mode share and park-and-ride travel
- Low end range reflects standard effectiveness of such measure in Los Angeles County
- High end range reflects implementation of other measures in concert with this measure including: ridesharing program, transit improvements and aggressive marketing for non-drive alone mode

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	4,517	7,227	2,710	4,336	7,227	11,563
Daily VMT reduction	59,990	95,984	35,994	57,591	95,984	153,575
Daily CO reduction (Tons/Day)	1.451	2.321	0.676	1.082	2.127	3.403
Daily NOx reduction (Tons/Day)	0.070	0.112	0.048	0.077	0.118	0.189
Daily ROG reduction (Tons/Day)	0.141	0.225	0.071	0.114	0.212	0.339
Daily PM reduction (Tons/Day)	0.001	0.002	0.001	0.001	0.002	0.003
Daily tire wear reduction (Tons/Day)	0.013	0.021	0.008	0.013	0.021	0.034

Costs and Benefits of TCM #5

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 10,365	$ 16,584	$ 20,769	$ 20,769	$ 30,230	$ 31,310	0	0
Daily cost per trip reduced	$ 1.43	$ 1.43	$ 2.87	$ 1.80	$ 4.18	$ 2.71	n/a	n/a
Daily cost per VMT reduced	$ 0.11	$ 0.11	$ 0.22	$ 0.14	$ 0.31	$ 0.20	n/a	n/a
Daily cost per Ton of CO reduced	$ 4,873	$ 4,873	$ 9,765	$ 6,103	$ 14,213	$ 9,201	n/a	n/a
Daily cost per Ton of ROG reduced	$ 48,893	$ 48,922	$ 97,968	$ 61,266	$ 142,596	$ 92,360	n/a	n/a
Daily cost per Ton of NOx reduced	$ 87,842	$ 87,749	$ 176,010	$ 109,890	$ 256,189	$ 165,661	n/a	n/a
Daily cost per ton of PM reduced	$ 5,182,666	$ 5,528,157	$ 10,384,615	$ 6,923,077	$ 15,115,146	$ 10,436,652	n/a	n/a
Total daily benefit	$ 6,820	$ 10,911	$ 15,010	$ 24,015	$ 46,035	$ 73,656	$ 4,324	$ 6,918
Daily benefit per trip reduced	$ 0.94	$ 0.94	$ 2.08	$ 2.08	$ 6.37	$ 6.37	n/a	n/a
Daily benefit per VMT reduced	$ 0.07	$ 0.07	$ 0.16	$ 0.16	$ 0.48	$ 0.48	n/a	n/a
Daily benefit per Ton of CO reduced	$ 3,206	$ 3,206	$ 7,057	$ 7,057	$ 21,643	$ 21,644	n/a	n/a
Daily benefit per Ton of ROG reduced	32,168	32,187	70,802	70,842	217,149	217,273	n/a	n/a
Daily benefit per Ton of NOx reduced	57,793	57,732	127,203	127,066	390,131	389,712	n/a	n/a
Daily benefit per Ton of PM reduced	3,409,798	3,637,100	7,504,962	8,005,154	23,017,744	24,551,836	n/a	n/a
Total daily cost-benefit	3,546	5,673	5,759	-3,246	-15,805	-42,346	$ -4,324	$ -6,918
Daily cost-benefit per trip reduced	0.49	0.49	0.80	-0.28	-2.19	-3,66	n/a	n/a
Daily cost-benefit per VMT reduced	0.04	0.04	0.06	-0.02	-0.16	-0.28	n/a	n/a
Daily cost-benefit per Ton of CO reduced	1667	1667	2,708	-954	-7,431	-12,444	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	16,725	16,735	27,167	-9,576	-74,553	-124,913	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	30,049	30,017	48,808	17,176	-133,942	-224,050	n/a	n/a
Daily cost-benefit per Ton of PM reduced	1,772,868	1,891,057	2,879,654	-1,082,077	-7,902,598	-14,115,184	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #5

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 69,305**	**$ 110,886**	**$ 72,189**	**$ 115,501**	**$ 61,365**	**$ 68,664**
Net daily cost per trip reduced	$ 9.59	$ 9.59	$ 9.99	$ 9.99	$ 8.49	$ 5.94
Net daily cost per VMT reduced	$ 0.72	$ 0.72	$ 0.75	$ 0.75	$ 0.64	$ 0.45
Net daily cost per Ton of CO reduced	$ 32,583	$ 32,585	$ 33,939	$ 33,941	$ 28,850	$ 20,177
Net daily cost per Ton of ROG reduced	$ 326,909	$ 327,097	$ 340,514	$ 340,710	$ 289,457	$ 202,548
Net daily cost per Ton of NOx reduced	$ 587,329	$ 586,698	$ 611,771	$ 611,114	$ 520,041	$ 363,300
Net daily cost per Ton of PM reduced	$ 34,652,383	$ 36,961,960	$ 36,094,481	$ 38,500,198	$ 30,682,427	$ 22,887,886
Total daily benefit	**$ 2,884**	**$ 4,615**	**0**	**0**	**$ 72,189**	**$ 115,501**
Net daily benefit per trip reduced	$ 0.40	$ 0.40	0	0	$ 9.99	$ 9.99
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 0.75	$ 0.75
Net daily benefit per Ton of CO reduced	$ 1,356	$ 1,356	0	0	$ 33,939	$ 33,940
Net daily benefit per Ton of ROG reduced	$ 13,605	$ 13,613	0	0	$ 340,514	$ 340,710
Net daily benefit per Ton of NOx reduced	$ 24,442	$ 24,416	0	0	$ 611,771	$ 611,114
Net daily benefit per Ton of PM reduced	$ 1,442,098	$ 1,538,238	0	0	$ 36,094,481	$ 38,500,198
Total daily cost-benefit	**$ 66,421**	**$ 106,271**	**$ 72,189**	**$ 115,501**	**$ -10,824**	**$ -46,837**
Net daily cost-benefit per trip reduced	$ 9.19	$ 9.19	$ 9.99	$ 9.99	$ -1.50	$ -4.05
Net daily cost-benefit per VMT reduced	$ 0.69	$ 0.69	$ 0.75	$ 0.75	$ -0.11	$ -0.30
Net daily cost-benefit per Ton of CO reduced	$ 31,227	$ 31,229	$ 33,939	$ 33,941	$ -5089	$ -13,763
Net daily cost-benefit per Ton of ROG reduced	$ 313,305	$ 313,484	$ 340,514	$ 340,710	$ -51,057	$ -138,162
Net daily cost-benefit per Ton of NOx reduced	$ 562,886	$ 562,281	$ 611,771	$ 611,114	$ -91,730	$ -247,814
Net daily cost-benefit per Ton of PM reduced	$ 33,210,286	$ 35,423,722	$ 36,094,481	$ 38,500,198	$ -5,412,054	$ -15,612,312

TCM #6 (Vanpool)

DESCRIPTION OF MEASURE:

- Vanpool program promoting and providing match list for commuters to vanpool.

Assumptions:

- Commuters affected include:
  - commuters who work for employers with 50 or more employees
  - commuters who travel more than 11 miles each direction to work
  - 18.2% (839,532) employees in the county are effected
- Commuters expected to switch commute travel mode to vanpools.
- Likely outcomes presented represent range of net commute vehicle trip reduction adjusted for current non-sov commuters and vanpoolers who travel to park-and-ride or other locations to meet vanpool.
- Low end of ranges assumes matchlist services vanpoolers is only strategy in place to promote trip reduction.
- High end of range assumes an aggressive marketing strategy, region-wide matching service, park-and-ride availability.

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	3,271	9,812	1,962	5,887	5,233	15,699
Daily VMT reduction	115,997	347,992	69,598	208,795	185,596	556,787
Daily CO reduction (Tons/Day)	1.818	5.455	0.849	2.548	2.667	8.002
Daily NOx reduction (Tons/Day)	0.112	0.335	0.079	0.238	0.191	0.573
Daily ROG reduction (Tons/Day)	0.216	0.649	0.108	0.323	0.324	0.972
Daily PM reduction (Tons/Day)	0.003	0.008	0.002	0.005	0.004	0.012
Daily tire wear reduction (Tons/Day)	0.026	0.077	0.015	0.046	0.041	0.123

Costs and Benefits of TCM #6

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 18,111**	**$54,339**	**$ 0**	**$ 0**	**$ 67,625**	**$ 67,625**	**$ 0**	**$ 0**
Daily cost per trip reduced	$ 3.46	$ 3.46	$ 0	$ 0	$ 12.93	$ 4.31	n/a	n/a
Daily cost per VMT reduced	$ 0.10	$ 0.10	$ 0	$ 0	$ 0.36	$ 0.12	n/a	n/a
Daily cost per Ton of CO reduced	$ 6,791	$ 6,790	$ 0	$ 0	$ 25,356	$ 8,450	n/a	n/a
Daily cost per Ton of ROG reduced	$ 55,897	$ 55,905	$ 0	$ 0	$ 208,720	$ 69,573	n/a	n/a
Daily cost per Ton of NOx reduced	$ 61,392	$ 61,262	$ 0	$ 0	$ 229,239	$ 76,241	n/a	n/a
Daily cost per ton of PM reduced	$ 158,866	$ 159,821	$ 0	$ 0	$ 593,205	$ 198,898	n/a	n/a
Total daily benefit	$ 19,960	$ 71,978	$ 10,866	$ 32,604	$ 43,572	$ 130,734	$ 8,361	$ 16,731
Daily benefit per trip reduced	$ 3.81	$ 4.59	$ 2.08	$ 2.08	$ 8.33	$ 4.31	n/a	n/a
Daily benefit per VMT reduced	$ 0.11	$ 0.13	$ 0.06	$ 0.06	$ 0.23	$ 0.12	n/a	n/a
Daily benefit per Ton of CO reduced	$ 7,484	$ 8,993	$ 4,704	$ 4,074	$ 16,338	$ 8,450	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 61,604	$ 74,051	$ 33,538	$ 33,543	$ 134,482	$ 69,573	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 67,661	$ 81,147	$ 36,835	$ 36,757	$ 147,703	$ 76,241	n/a	n/a
Daily benefit per Ton of PM reduced	$ 175,087	$ 211,699	$ 95,320	$ 95,893	$ 382,213	$ 198,898	n/a	n/a
Total daily cost-benefit-benefit	$ -1,849	$ -17,638	$ -10,866	$ -32,604	$ 24,053	$ -63,108	$ -8,361	$ -16,731
Daily cost-benefit per trip reduced	$ -0.35	$ -1.12	$ -2.08	$ -2.08	$ 4.60	$ -4.02	n/a	n/a
Daily cost-benefit per VMT reduced	$ -0.01	$ -0.03	$ -0.06	$ -0.06	$ 0.13	$ -0.11	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ -693	$ -2,204	$ -4,074	$ -4074	$ 9,019	$ -7,886	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ -5,707	$ -18,147	$ -33,538	$ -33,543	$ 74,238	$ -64,926	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ -6,268	$ -19,886	$ -36,835	$ -36,757	$ 81,536	$ -71,148	n/a	n/a
Daily cost-benefit per Ton of PM reduced	$ -16,220	$ -51,878	$ -95,320	$ -95,893	$ 210,992	$ -185,612	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #6

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 59,072**	**$ 189,327**	**$ 64,649**	**$ 206,058**	**$ 85,736**	**$ 121,965**
Net daily cost per trip reduced	$ 11.29	$ 12.06	$ 12.36	$ 13.13	$ 16.39	$ 7.77
Net daily cost per VMT reduced	$ 0.32	$ 0.34	$ 0.35	$ 0.37	$ 0.46	$ 0.22
Net daily cost per Ton of CO reduced	$ 22,149	$ 23,657	$ 24,240	$ 25,748	$ 32,147	$ 15,240
Net daily cost per Ton of ROG reduced	$ 182,321	$ 194,781	$ 199,533	$ 211,994	$ 264,617	$ 125,478
Net daily cost per Ton of NOx reduced	$ 200,244	$ 213,447	$ 219,148	$ 232,309	$ 290,631	$ 137,502
Net daily cost per Ton of PM reduced	$ 518,174	$ 556,845	$ 567,094	$ 606,053	$ 752,072	$ 358,720
Total daily benefit	**$ 5,577**	**$ 16,731**	**0**	**0**	**$ 82,760**	**$ 260,397**
Net daily benefit per trip reduced	$ 1.07	$ 1.07	0	0	$ 15.82	$ 16.59
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 0.45	$ 0.47
Net daily benefit per Ton of CO reduced	$ 2,091	$ 2,091	0	0	$ 31031	$ 32,537
Net daily benefit per Ton of ROG reduced	$ 17,213	$ 17,213	0	0	$ 255,430	$ 267,899
Net daily benefit per Ton of NOx reduced	$ 18,905	$ 18,862	0	0	$ 280,540	$ 293,571
Net daily benefit per Ton of PM reduced	$ 48,920	$ 49,208	0	0	$ 725,961	$ 765,875
Total daily cost-benefit	**$ 53,495**	**$ 172,597**		**$**	**$ 2,977**	**$ -138,43**
Net daily cost-benefit per trip reduced	$ 10.22	$ 10.99	$ 12.36	$ 13.13	$ 0.57	$ -8.82
Net daily cost-benefit per VMT reduced	$ 0.29	$ 0.31	$ 0.35	$ 0.37	$ 0.02	$ -0.25
Net daily cost-benefit per Ton of CO reduced	$ 20,058	$ 21,567	$ 24,240	$ 25,748	$ 1,116	$ -17,298
Net daily cost-benefit per Ton of ROG reduced	$ 165,108	$ 177,569	$ 199,533	$ 211,994	$ 9,187	$ -142,420
Net daily cost-benefit per Ton of NOx reduced	$ 181,339	$ 194,585	$ 219,148	$ 232,309	$ 10,090	$ -156,068
Net daily cost-benefit per Ton of PM reduced	$ 469,254	$ 507,638	$ 567,094	$ 606,053	$ 26,111	$ -407,155

TCM #7 (Rideshare)

DESCRIPTION OF MEASURE:

- Informal ridesharing programs (carpool & vanpools only) for commuters employed by employers with 25-99 employees (922,562 employees).

Assumptions:

- Availability of programs to promote and incentivize shared-ride and transit modes affecting commute trips
- Likely outcomes presented represent range of net vehicle trips reduced adjusted for current non-sov commuters and those who use a car to get to transit or other shared-ride meeting point.
- Low end range reflects basic voluntary program only with promotional and other non-monetary incentives.
- High end range reflects parking management strategies, subsidies, and free preferential parking for vanpoolers and carpoolers.

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	8,642	17,285	5,185	10,371	**13,828**	**2,656**
Daily VMT reduction	111,383	222,767	66,830	133,660	**178,213**	**356,426**
Daily CO reduction (Tons/Day)	2.740	5.479	1.277	2.555	**4.017**	**8.034**
Daily NOx reduction (Tons/Day)	0.131	0.262	0.090	0 .179	**0.221**	**0.442**
Daily ROG reduction (Tons/Day)	0.264	0.529	0.133	0.267	**0.398**	**0.795**
Daily PM reduction (Tons/Day)	0.002	0.005	0.001	0.003	**0.004**	**0.008**
Daily tire wear reduction (Tons/Day)	0.025	0.049	0.015	0.029	**0.039**	**0.079**

Costs and Benefits of TCM #7

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 21,197	$ 42,395	$ 17,741	$ 20,769	$ 180,322	$ 180,322	$ 0	$ 0
Daily cost per trip reduced	$ 1.53	$ 1.53	$ 1.28	$ 0.75	$ 13.04	$ 6.52	n/a	n/a
Daily cost per VMT reduced	$ 0.12	$ 0.12	$ 0.10	$ 0.06	$1.01	$ 0.51	n/a	n/a
Daily cost per Ton of CO reduced	$ 5,277	$ 5,277	$ 4,417	$ 2,585	$44,890	$ 22,545	n/a	n/a
Daily cost per Ton of ROG reduced	$ 53,394	$ 53,260	$ 44,688	$ 26,092	$ 454,211	$ 226,535	n/a	n/a
Daily cost per Ton of NOx reduced	$ 95,916	$ 96,134	$ 80,277	$ 47,096	$ 815,935	$ 408,893	n/a	n/a
Daily cost per ton of PM reduced	$ 7,065,829	$ 5,299,400	$ 5,913,737	$ 2,596,154	$ 60,107,225	$ 22,540,209	n/a	n/a
Total daily benefit	$ 12,718	$ 25,437	$ 28,718	$ 57,437	$ 68,176	$ 136,656	$ 8,028	$ 16,057
Daily benefit per trip reduced	$ 0.92	$ 0.92	$ 2.08	$ 2.08	$ 4.93	$ 4.93	n/a	n/a
Daily benefit per VMT reduced	$ 0.07	$ 0.07	$ 0.16	$ 0.16	$ 0.38	$ 0.38	n/a	n/a
Daily benefit per Ton of CO reduced	$ 3,166	$ 3,166	$ 7,149	$ 7,149	$ 16,972	$ 16,972	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 32,037	$ 31,956	$ 72,336	$ 72,157	$ 171,727	$ 171,302	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 57,550	$ 57,681	$ 129,944	$ 130,243	$ 308,487	$ 309,198	n/a	n/a
Daily benefit per Ton of PM reduced	$ 4,239,498	$ 3,179,640	$ 9,572,538	$ 7,179,663	$ 22,725,241	$ 17,044,547	n/a	n/a
Total daily cost-benefit-benefit	$ 8,479	$ 16,958	$ -10,976	$ -36,668	$ 112,146	$ 43,965	$ -8,028	$ -16,057
Daily cost-benefit per trip reduced	$ 0.61	$ 0.61	$ -0.79	$ -1.33	$ 8.11	$ 1.59	n/a	n/a
Daily cost-benefit per VMT reduced	$ 0.05	$ 0.05	$ -0.06	$ -0.10	$ 0.63	$ 0.12	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ 2,110	$ 2,111	$ -2,732	$ -4,564	$ 27,918	$ 5,472	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ 21,358	$ 21,304	$ -27,648	$ -46,065	$ 282,484	$ 55,233	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ 38,366	$ 38,454	$ -49,667	$ -83,148	$ 507,448	$ 99,695	n/a	n/a
Daily cost-benefit per Ton of PM reduced	$ 2,826,332	$ 2,119,760	$ -3,658,801	$ -4,583,510	$ 37,381,984	$ 5,495,662	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #7

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 112,285**	**$ 224,577**	**$ 117,640**	**$ 235,287**	**$ 219,260**	**$ 243,486**
Net daily cost per trip reduced	$ 8.12	$ 8.12	$ 8.51	$ 8.51	$ 15.86	$ 8.80
Net daily cost per VMT reduced	$ 0.63	$ 0.63	$ 0.66	$ 0.66	$ 1.23	$ 0.68
Net daily cost per Ton of CO reduced	$ 27,952	$ 27,953	$ 29,286	$ 29,286	$ 54,583	$ 30,306
Net daily cost per Ton of ROG reduced	$ 282,834	$ 282,132	$ 296,323	$ 295,587	$ 552,293	$ 305,887
Net daily cost per Ton of NOx reduced	$ 508,077	$ 509,245	$ 532,308	$ 533,531	$ 992,128	$ 552,122
Net daily cost per Ton of PM reduced	$ 37,428,342	$ 28,072,150	$ 39,213,364	$ 29,410,916	$ 73,086,791	$ 30,435,763
Total daily benefit	**$ 5,355**	**$ 10,710**	**0**	**0**	**$ 117,640**	**$ 235,287**
Net daily benefit per trip reduced	$ 0.39	$ 0.39	0	0	$ 8.51	$ 8.51
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 0.66	$ 0.66
Net daily benefit per Ton of CO reduced	$ 1,333	$ 1,333	0	0	$ 29,285	$ 29,286
Net daily benefit per Ton of ROG reduced	$ 13,489	$ 13,455	0	0	$ 296,322	$ 295,587
Net daily benefit per Ton of NOx reduced	$ 24,231	$ 24,286	0	0	$ 532,308	$ 533,531
Net daily benefit per Ton of PM reduced	$ 1,785,022	$ 1,338,766	0	0	$ 39,213,363	$ 29,410,916
Total daily cost-benefit	**$ 106,930**	**$ 213,867**	**$ 117.640**	**$ 235,287**	**$ 101,620**	**$ 8,199**
Net daily cost-benefit per trip reduced	$ 7.73	$ 7.73	$ 8.51	$ 8.51	$ 7.35	$ 0.30
Net daily cost-benefit per VMT reduced	$ 0.60	$ 0.60	$ 0.66	$ 0.66	$ 0.57	$ 0.02
Net daily cost-benefit per Ton of CO reduced	$ 26,619	$ 26,620	$ 29,286	$ 29,286	$ 25,298	$ 1,021
Net daily cost-benefit per Ton of ROG reduced	$ 269,345	$ 268,677	$ 296,323	$ 295,587	$ 255,970	$ 10,300
Net daily cost-benefit per Ton of NOx reduced	$ 483,846	$ 484,959	$ 532,308	$ 533,531	$ 459,820	$ 18,591
Net daily cost-benefit per Ton of PM reduced	$ 35,643,320	$ 26,73,383	$ 39,213,364	$ 29,410,916	$ 33,873,427	$ 1,024,847

TCM #8 (Building access to rideshare)

DESCRIPTION OF MEASURE:

- Provide ridesharing loading areas close to the entrance of buildings to provide safe and convenient access to ridesharers

Assumptions:

- 22% of daily person trips in Los Angeles County is made by ridesharing
- 20% (922,562) of employees are affected by this measure
- Former mode use for new ridesharers (carpoolers and vanpoolers) is assumed to be similar to those found in the SCAB region
- Likely outcomes presented present range of net vehicle trips adjusted for former mode use, park-and-ride travel and other locations where carpoolers and vanpoolers meet.
- Low end range reflects standard effectiveness in Los Angeles County
- High end range reflects implementation of other measures in concert with this measure including: ridesharing program for small employers, vanpool program, and preferential parking for ridesharers

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	2,074	4,148	1,245	2,489	**3,319**	**6,637**
Daily VMT reduction	27,547	55,094	16,528	33,057	**44,075**	**88,151**
Daily CO reduction (Tons/Day)	0.666	1.332	0.311	0.621	**0.977**	**1.953**
Daily NOx reduction (Tons/Day)	0.032	0.064	0.022	0.044	**0.054**	**0.108**
Daily ROG reduction (Tons/Day)	0.065	0.129	0.033	0.065	**0.097**	**0.195**
Daily PM reduction (Tons/Day)	0.001	0.001	0.000	0.001	**0.001**	**0.002**
Daily tire wear reduction (Tons/Day)	0.006	0.012	0.004	0.007	**0.010**	**0.019**

Costs and Benefits of TCM #8

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 5,219**	**$ 10,438**	**$ 11,513**	**$ 11,513**	**$ 574**	**$ 1,149**	**$ 0**	**$ 0**
Daily cost per trip reduced	$ 1.57	$ 1.57	$ 3.47	$ 1.73	$ 0.17	$ 0.17	n/a	n/a
Daily cost per VMT reduced	$ 0.12	$ 0.12	$ 0.26	$ 0.13	$ 0.01	$ 0.01	n/a	n/a
Daily cost per Ton of CO reduced	$ 5,342	$ 5,345	$ 11,784	$ 5,895	$ 588	$ 588	n/a	n/a
Daily cost per Ton of ROG reduced	$ 53,255	$ 53,806	$ 117,476	$ 59,344	$ 5,862	$ 5,921	n/a	n/a
Daily cost per Ton of NOx reduced	$ 96,649	$ 25,261	$ 213,197	$ 16,831	$ 10,638	$ 1,679	n/a	n/a
Daily cost per ton of PM reduced	$ 5,219,030	$ 5,219,146	$ 11,512,642	$ 5,756,321	$ 575,442	$ 575,356	n/a	n/a
Total daily benefit	$ 3,131	$ 6,263	$ 6,891	$ 13,785	$ 16,373	$ 32,751	1,986	3,971
Daily benefit per trip reduced	$ 0.94	$ 0.94	$ 2.08	$ 2.08	$ 4.93	$ 4.93	n/a	n/a
Daily benefit per VMT reduced	$ 0.07	$ 0.07	$ 0.16	$ 01.6	$ 0.37	$ 0.37	n/a	n/a
Daily benefit per Ton of CO reduced	$ 3,205	$ 3,207	$ 7,053	$ 7,058	$ 16,759	$ 16,770	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 31,953	$ 32,283	$ 70,319	$ 71,054	$ 167,074	$ 168,821	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 57,989	$ 9,156	$ 127,615	$ 20,153	$ 303,208	$ 47,882	n/a	n/a
Daily benefit per Ton of PM reduced	$ 3,131,418	$ 3,131,487	$ 6,891,231	$ 6,892,269	$ 16,373,206	$ 16,375,674	n/a	n/a
Total daily cost-benefit-benefit	$ 2,088	$ 4,175	$ 4,621	$ -2,272	$ -15,799	$ -31,603	$ -1,986	$ -3,971
Daily cost-benefit per trip reduced	$ 0.63	$ 0.36	$ 1.39	$ -0.34	$ -4.76	$ -4.76	n/a	n/a
Daily cost-benefit per VMT reduced	$ 0.05	$ 0.03	$ 0.10	$ -0.03	$ -0.36	$ -0.36	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ 2,137	$ 2,138	$ 4,730	$ -1,163	$ -16,171	$ -16,182	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ 21,302	$ 21,522	$ 47,157	$ -11,711	$ -161,212	$ -162,900	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ 38,659	$ 6,104	$ 85,582	$ -3,321	$ -292,570	$ -46,203	n/a	n/a
Daily cost-benefit per Ton of PM reduced	$ 2,087,612	$ 2,087,658	$ 4,621,412	$ -1,135,948	$ -15,798,764	$ -15,801,318	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #8

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 27,057**	**$ 54,121**	**$ 28,381**	**$ 56,770**	**$ 17,306**	**$ 23,100**
Net daily cost per trip reduced	$ 8.15	$ 8.15	$ 8.55	$ 8.55	$ 5.22	$ 3.48
Net daily cost per VMT reduced	$ 0.61	$ 0.61	$ 0.64	$ 0.64	$ 0.39	$ 0.26
Net daily cost per Ton of CO reduced	$ 27,694	$ 27,712	$ 29,050	$ 29,068	$ 17,714	$ 11,828
Net daily cost per Ton of ROG reduced	$ 276,092	$ 278,975	$ 289,606	$ 292,628	$ 176,593	$ 119,070
Net daily cost per Ton of NOx reduced	$ 501,055	$ 79,124	$ 525,581	$ 82,997	$ 320,484	$ 33,771
Net daily cost per Ton of PM reduced	$ 27,056,980	$ 27,060,555	$ 28,381,383	$ 28,384,958	$ 17,306,115	$ 11,549,823
Total daily benefit	**$ 1,324**	**$ 2,649**	**0**	**0**	**$ 28,381**	**$ 56,770**
Net daily benefit per trip reduced	$ 0.40	$ 0.40	0	0	$ 8.55	$ 8.55
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 0.64	$ 0.64
Net daily benefit per Ton of CO reduced	$ 1,356	$ 1,356	0	0	$ 29,050	$ 29,068
Net daily benefit per Ton of ROG reduced	$ 13,514	$ 13,654	0	0	$ 289,606	$ 292,628
Net daily benefit per Ton of NOx reduced	$ 24,526	$ 3,873	0	0	$ 525,581	$ 82,997
Net daily benefit per Ton of PM reduced	$ 1,324,403	$ 1,324,403	0	0	$ 28,381,383	$ 28,384,958
Total daily cost-benefit	**$ 25,733**	**$ 51,472**	**$ 28,381**	**$ 56,770**	**$ -11,075**	**$ -33,670**
Net daily cost-benefit per trip reduced	$ 7.76	$ 7.76	$ 8.55	$ 8.55	$ -3.34	$ -5.07
Net daily cost-benefit per VMT reduced	$ 0.58	$ 0.58	$ 0.64	$ 0.64	$ -0.25	$ -0.38
Net daily cost-benefit per Ton of CO reduced	$ 26,338	$ 26,356	$ 29,050	$ 29,068	$ -11,336	$ -17,240
Net daily cost-benefit per Ton of ROG reduced	$ 262,577	$ 265,321	$ 289,606	$ 292,628	$ -113,013	$ -173,558
Net daily cost-benefit per Ton of NOx reduced	$ 476,529	$ 75,252	$ 525,581	$ 82,997	$ -205,098	$ -49,226
Net daily cost-benefit per Ton of PM reduced	$ 25,732,577	$ 25,736,152	$ 28,381,383	$ 28,384,958	$ -11,075,268	$ -16,835,136

TCM #9 (Childcare centers)

DESCRIPTION OF MEASURE:

- Provide childcare centers at multi-modal transit facilities and park-and-ride lots

Assumption:

- 7,909 spaces will be added at different major transit facilities and at park-and-ride lots in Los Angeles County
- Utilization rate is assumed to be 75% and 100% for standard and high effectiveness
- This measure affects commute trips only. This TCM strategy does not affect the total trips, instead it affects the total vehicle miles traveled
- Likely outcomes presented here represent range of net vehicle miles traveled reduced
- Low end range reflects 75% utilization rate
- High end range reflects 100% utilization rate

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	0	0	0	0	0	0
Daily VMT reduction	27,896	37,194	16,737	22,317	44,633	59,511
Daily CO reduction (Tons/Day)	0.295	0.394	0.138	0,184	0.433	0.578
Daily NOx reduction (Tons/Day)	0.023	0.031	0.017	0.023	0.041	0.054
Daily ROG reduction (Tons/Day)	0.044	0.059	0.022	0.029	0.066	0.087
Daily PM reduction (Tons/Day)	0.001	0.001	0.000	0.000	0.001	0.001
Daily tire wear reduction (Tons/Day)	0.006	0.008	0.004	0.005	0.010	0.013

Costs and Benefits of TCM #9

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 141,723**	**$ 188,964**	**$ 11,732**	**$**	**$ 66,445**	**$ 66,645**	**$ 0**	**$ 0**
Daily cost per trip reduced	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Daily cost per VMT reduced	$ 3.18	$ 3.18	$ 0.26	$ 0.20	$ 1.49	$ 1.12	n/a	n/a
Daily cost per Ton of CO reduced	$ 327,305	$ 326,928	$ 27,094	$ 20,297	$ 153,453	$ 114,957	n/a	n/a
Daily cost per Ton of ROG reduced	$ 2,147,321	$ 2,147,321	$ 177,756	$ 133,317	$ 1,006,746	$ 755,059	n/a	n/a
Daily cost per Ton of NOx reduced	$ 3,543,080	$ 3,499,338	$ 293,298	$ 217,258	$ 1,661,130	$ 1,230,467	n/a	n/a
Daily cost per ton of PM reduced	$ 141,723,196	$ 188,964,2	$ 11,731,905	$ 11,731,905	$ 66,445,219	$ 66,445,219	n/a	n/a
Total daily benefit	**$ 7,247**	**$ 9,062**	**$ 128,673**	**$ 171,564**	**$ 29,346**	**$ 39,128**	**$ 2,011**	**$ 2,681**
Daily benefit per trip reduced	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Daily benefit per VMT reduced	$ 0.16	$ 0.15	$ 2.88	$ 2.88	$ 0.66	$ 0.66	n/a	n/a
Daily benefit per Ton of CO reduced	$ 16,738	$ 15,678	$ 297,167	$ 296,824	$ 67,774	$ 67,696	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 109,808	$ 102,976	$ 1,949,596	$ 1,949,596	$ 444,639	$ 444,639	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 181,184	$ 167,813	$ 3,216,834	$ 3,177,120	$ 733,655	$ 724,597	n/a	n/a
Daily benefit per Ton of PM reduced	$ 7,247,348	$ 9,061,909	$ 128,673,346	$ 171,564,461	$ 29,346,181	$ 39,128,241	n/a	n/a
Total daily cost-benefit-benefit	**$ 134,476**	**$ 179,902**	**$ -116,941**	**$ -159,833**	**$ 37,099**	**$ 27,317**	**$ -2,011**	**$ -2,681**
Daily cost-benefit per trip reduced	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Daily cost-benefit per VMT reduced	$ 3.01	$ 0.15	$ -2.62	$ -2.69	$ 0.83	$ 0.46	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ 310,568	$ 311,250	$ -270,073	$ -276,527	$ 85,679	$ 47,261	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ 2,037,513	$ 2,044,344	$ -1,771,840	$ -1,816,279	$ 562,107	$ 310,420	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ 3,361,896	$ 3,331,525	$ -2,923,536	$ -2,959,862	$ 927,476	$ 505,870	n/a	n/a
Daily cost-benefit per Ton of PM reduced	$ 134,475,848	$ 179,902,3	$ -116,941,442	$ -159,832,557	$ 37,099,038	$ 27,316,977	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #9

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 165,936**	**$ 220,647**	**$ 167,277**	**$ 222,435**	**$ 219,900**	**$ 267,141**
Net daily cost per trip reduced	n/a	n/a	n/a	n/a	n/a	n/a
Net daily cost per VMT reduced	$ 3.72	$ 3.71	$ 3.75	$ 3.74	$ 4.93	$ 4.49
Net daily cost per Ton of CO reduced	$ 383,225	$ 381,743	$ 386,322	$ 384,836	$ 507,853	$ 462,182
Net daily cost per Ton of ROG reduced	$ 2,514,187	$ 2,507,355	$ 2,534,507	$ 2,527,676	$ 3,331,823	$ 3,035,698
Net daily cost per Ton of NOx reduced	$ 4,148,409	$ 4,086,060	$ 4,181,937	$ 4,119,175	$ 5,497,508	$ 4,947,063
Net daily cost per Ton of PM reduced	$ 165,936,353	$ 220,647,262	$ 167,277,489	$ 222,435,473	$ 219,900,319	$ 267,141,385
Total daily benefit	**$ 1,341**	**$ 1,788**	**0**	**0**	**$ 167,277**	**$ 222,435**
Net daily benefit per trip reduced	n/a	n/a	n/a	n/a	n/a	n/a
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 3.75	$ 3.74
Net daily benefit per Ton of CO reduced	$ 3,097	$ 3,094	0	0	$ 386,322	$ 384,836
Net daily benefit per Ton of ROG reduced	$ 20,320	$ 20,321	0	0	$ 2,534,507	$ 2,527,675
Net daily benefit per Ton of NOx reduced	$ 33,528	$ 33,115	0	0	$ 4,181,937	$ 4,119,175
Net daily benefit per Ton of PM reduced	$ 1,341,134	$ 1,788,211	0	0	$ 167,277,489	$ 222,435,473
Total daily cost-benefit	**$ 164,595**	**$ 218,859**	**$ 167,277**	**$ 222,435**	**$ 52,623**	**$ 44,706**
Net daily cost-benefit per trip reduced	n/a	n/a	n/a	n/a	n/a	n/a
Net daily cost-benefit per VMT reduced	$ 3.69	$ 3.68	$ 3.75	$ 3.74	$ 1.18	$ 0.75
Net daily cost-benefit per Ton of CO reduced	$ 380,128	$ 378,649	$ 386,322	$ 384,836	$ 121,530	$ 77,346
Net daily cost-benefit per Ton of ROG reduced	$ 2,493,867	$ 2,487,035	$ 2,534,507	$ 2,527,676	$ 797,316	$ 508,022
Net daily cost-benefit per Ton of NOx reduced	$ 4,114,881	$ 4,052,945	$ 4,181,937	$ 4,119,175	$ 1,315,571	$ 827,887
Net daily cost-benefit per Ton of PM reduced	$ 164,595,223	$ 218,859,051	$ 167,277,489	$ 222,435,473	$ 52,622,830	$ 44,705,912

TCM #10 (Bicycle improvements)

DESCRIPTION OF MEASURE:

- Provide bicycle improvements such as bike lockers, bike lanes, and shower facilities to encourage more people to use bicycles as a mode of travel for shorter trips.

Assumptions:

- 8.8% of employees in los angeles county commute a distance of 3 miles or less to work and could use bicycle mode (405,927 employees).
- The former mode of travel for bicyclists is assumed to be similar to those found elsewhere in major urban areas.
- Likely outcomes presented represent net vehicle trips reduced adjusted for former mode of travel
- Low end range reflects standard effectiveness of such a measures in Los Angeles County.
- High end range reflects implementation of other measure in concert with this measure including: bicycle subsidy and parking charge for SOV users

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	1,738	3,477	2,608	5,215	**4,346**	**8,692**
Daily VMT reduction	5,215	10,430	7,823	15,645	**13,038**	**26,075**
Daily CO reduction (Tons/Day)	0.369	0.738	0.430	0.859	**0.799**	**1.597**
Daily NOx reduction (Tons/Day)	0.012	0.024	0.019	0.037	**0.031**	**0.061**
Daily ROG reduction (Tons/Day)	0.026	0.052	0.034	0.068	**0.060**	**0.120**
Daily PM reduction (Tons/Day)	0.000	0.000	0.000	0.000	**0.000**	**0.001**
Daily tire wear reduction (Tons/Day)	0.001	0.002	0.002	0.003	**0.003**	**0.006**

Costs and Benefits of TCM #10

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 3,969	$ 7,938	$ 0	$ 0	$ 64,077	$ 71,412	0	0
Daily cost per trip reduced	$ 0.91	$ 0.91	$ 0	$ 0	$ 14.75	$ 8.22	n/a	n/a
Daily cost per VMT reduced	$ 0.30	$ 0.30	$ 0	$ 0	$ 4.91	$ 2.74	n/a	n/a
Daily cost per Ton of CO reduced	$ 4,967	$ 4,971	$ 0	$ 0	$ 4,296	$ 3,192	n/a	n/a
Daily cost per Ton of ROG reduced	$ 66,150	$ 66,157	$ 0	$ 0	$ 42,804	$ 31,795	n/a	n/a
Daily cost per Ton of NOx reduced	$ 128,032	$ 130,146	$ 0	$ 0	$ 76,739	$ 56,993	n/a	n/a
Daily cost per ton of PM reduced	$ ERR	ERR	ERR	ERR	$ 4,271,810	$ 3,246,018	n/a	n/a
Total daily benefit	$ 5,668	$ 11,338	$ 9,024	$ 18,051	$ 21,145	$ 42,295	$ 446	$ 893
Daily benefit per trip reduced	$ 1.30	$ 1.30	$ 2.08	$ 2.08	$ 4.87	$ 4.87	n/a	n/a
Daily benefit per VMT reduced	$ 0.43	$ 0.43	$ 0.69	$ 0.69	$ 1.62	$ 1.62	n/a	n/a
Daily benefit per Ton of CO reduced	$ 7,094	$ 7,099	$ 11,294	$ 11,303	$ 26,464	$ 26,484	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 94,474	$ 94,482	$ 150,404	$ 150,421	$ 352,416	$ 352,457	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 182,854	$ 185,866	$ 291,104	$ 295,910	$ 682,096	$ 693,357	n/a	n/a
Daily benefit per Ton of PM reduced	$ ERR	ERR	ERR	ERR	ERR	ERR	N/A	n/a
Total daily cost-benefit-benefit	$ -1,699	$ -3,399	$ -9,024	$ -18,051	$ 42,932	$ 29,118	$ -446	$ -893
Daily cost-benefit per trip reduced	$ -0.39	$ -0.39	$ -2.08	$ -2.08	$ 9.88	$ 3.35	n/a	n/a
Daily cost-benefit per VMT reduced	$ -0.13	$ -0.13	$ -0.69	$ -0.69	$ 3.29	$ 1.12	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ -2,127	$ -2,128	$ -11,294	$ -11,303	$ 53,732	$ 18,233	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ -28,325	$ -28,324	$ -150,404	$ -150,421	$ 715,536	$ 242,647	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ -54,822	$ -55,720	$ -291,104	$ -295,910	$ 1,384,909	$ 477,338	n/a	n/a
Daily cost-benefit per Ton of PM reduced	$ ERR	$ ERR	ERR	ERR	ERR	ERR	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #10

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 36,033**	**$ 72,074**	**$ 36,284**	**$ 72,576**	**$ 68,046**	**$ 79,351**
Net daily cost per trip reduced	$ 8.29	$ 8.29	$ 8.35	$ 8.35	$ 15.66	$ 9.13
Net daily cost per VMT reduced	$ 2.76	$ 2.76	$ 2.78	$ 2.78	$ 5.22	$ 3.04
Net daily cost per Ton of CO reduced	$ 45,098	$ 45,131	$ 45,412	$ 45,445	$ 85,164	$ 49,687
Net daily cost per Ton of ROG reduced	$ 600,554	$ 600,619	$ 604,733	$ 604,793	$ 1,134,102	$ 661,263
Net daily cost per Ton of NOx reduced	$ 1,162,362	$ 1,181,548	$ 1,170,450	$ 1,189,767	$ 2,195,037	$ 1,300,845
Net daily cost per Ton of PM reduced	ERR	ERR	ERR	ERR	ERR	ERR
Total daily benefit	**$ 251**	**$ 501**	**0**	**0**	**$ 36,284**	**$ 72,576**
Net daily benefit per trip reduced	$ 0.06	$ 0.06	0	0	$ 8.35	$ 8.35
Net daily benefit per VMT reduced	$ 0.02	$ 0.02	0	0	$ 2.78	$ 2.78
Net daily benefit per Ton of CO reduced	$ 314	$ 314	0	0	$ 45,412	$ 45,445
Net daily benefit per Ton of ROG reduced	$ 4,179	$ 4,179	0	0	$ 604,733	$ 604,793
Net daily benefit per Ton of NOx reduced	$ 8,088	$ 8,224	0	0	$ 1,170,450	$ 1,189,767
Net daily benefit per Ton of PM reduced	ERR	ERR	ERR	0	ERR	ERR
Total daily cost-benefit	**$ 35,783**	**$ 71,573**	**$ 36,284**	**$ 72,576**	**$ 31,762**	**$ 6,776**
Net daily cost-benefit per trip reduced	$ 8.24	$ 2.74	$ 8.35	$ 8.35	$ 7.31	$ 0.78
Net daily cost-benefit per VMT reduced	$ 2.74	$ 8.24	$ 2.78	$ 2.78	$ 2.44	$ 0.26
Net daily cost-benefit per Ton of CO reduced	$ 44,784	$ 44,817	$ 45,412	$ 45,447	$ 39,752	$ 4,242
Net daily cost-benefit per Ton of ROG reduced	$ 596,375	$ 596,440	$ 604,733	$ 604,793	$ 529,370	$ 56,470
Net daily cost-benefit per Ton of NOx reduced	$ 1,154,274	$ 1,173,324	$ 1,170,450	$ 1,189,767	$ 1,024,586	$ 111,078
Net daily cost-benefit per Ton of PM reduced	ERR	ERR	ERR	ERR	ERR	ERR

TCM #11 (Employee transit subsidy)

DESCRIPTION OF MEASURE:

- Employee transit subsidy equal to 50% of the cost of a monthly transit pass.

Assumptions:

- Employees affected includes the expected number of employees who would switch commute travel mode to transit and only those who are not currently affected by regulation XV (1,383,844 employees).
- Historical market share of transit riders is unchanged due to offer of subsidy.
- Likely outcomes presented represent range of net vehicle trip reduction adjusted for current non-SOV commuters and those who travel to park-and-ride lots to meet transit.
- Low end of range assumes transit pass subsidy is the only employer effort to promote trip reduction.
- High end of range assumes other aggressive strategies in place such as: reduced headways, parking charge, feeder services.

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	31,265	46,897	18,759	28,138	50,023	75,035
Daily VMT reduction	427,700	641,550	256,620	384,930	684,320	1,026,480
Daily CO reduction (Tons/Day)	10.173	15.259	4.744	7.115	14.917	22.375
Daily NOx reduction (Tons/Day)	0.495	0.743	0.340	0.510	0.835	1.253
Daily ROG reduction (Tons/Day)	0.995	1.493	0.502	0.753	1.497	2.245
Daily PM reduction (Tons/Day)	0.009	0.014	0.006	0.008	0.015	0.023
Daily tire wear reduction (Tons/Day)	0.094	0.141	0.057	0.085	0.151	0.226

Costs and Benefits of TCM #11

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 69,263	$ 103,893	$ 34,631	$ 51,946	$ 41,576	$ 62,367	$ 0	$ 0
Daily cost per trip reduced	$ 1.38	$ 1.38	$ 0.69	$ 0.69	$ 0.83	$ 0.83	n/a	n/a
Daily cost per VMT reduced	$ 0.10	$ 0.10	$ 0.05	$ 0.05	$ 0.06	$ 0.06	n/a	n/a
Daily cost per Ton of CO reduced	$ 4,643	$ 4,644	$ 2,322	$ 2,322	$ 2,787	$ 2,787	n/a	n/a
Daily cost per Ton of ROG reduced	$ 46,268	$ 46,258	$ 23,134	$ 23,129	$ 27,773	$ 27,767	n/a	n/a
Daily cost per Ton of NOx reduced	$ 82,949	$ 82,917	$ 41,475	$ 41,458	$ 49,792	$ 49,773	n/a	n/a
Daily cost per ton of PM reduced	$ 4,617,508	$ 4,722,483	$ 2,308,754	$ 2,361,241	$ 2,771,758	$ 2,834,772	n/a	n/a
Total daily benefit	$ 153,798	$ 230,695	$ 103,894	$ 155,843	$ 259,045	$ 388,573	$ 30,828	$ 46,245
Daily benefit per trip reduced	$ 3.07	$ 3.07	$ 2.08	$ 2.08	$ 5.18	$ 5.18	n/a	n/a
Daily benefit per VMT reduced	$ 0.22	$ 0.22	$ 0.15	$ 0.15	$ 0.38	$ 0.38	n/a	n/a
Daily benefit per Ton of CO reduced	$ 10,310	$ 10,311	$ 6,965	$ 6,965	$ 17,366	$ 17,367	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 102,737	$ 102,715	$ 69,401	$ 69,386	$ 173,043	$ 173,005	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 184,189	$ 184,116	$ 124,424	$ 124,375	$ 310,234	$ 310,112	n/a	n/a
Daily benefit per Ton of PM reduced	$ 10,253,193	$ 10,486,261	$ 6,926,262	$ 7,083,724	$ 17,269,665	$ 17,662,275	n/a	n/a
Total daily cost-benefit-benefit	$ -84,535	$ -126,802	$ -69,263	-$ -103,897	$ -217,469	$ -326,206	$-30,828	$ -46,245
Daily cost-benefit per trip reduced	$ -1.69	$ -1.6	$ -1.38	$ -1.38	$ -4.35	$ -4.35	n/a	n/a
Daily cost-benefit per VMT reduced	$ -0.12	$ -0.1	$ -0.10	$ -0.10	$ -0.32	$ -0.32	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ -5,667	$ -5,667	$ -4,643	$ -4,644	$ -14,579	$ -14,580	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ -56,470	$ -56,457	$ -46,268	$ -46,258	$ -145,270	$ -145,238	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ -101,240	$ -101,200	$ -82,949	$ -82,917	$ -260,441	$ -260,339	n/a	n/a
Daily cost-benefit per Ton of PM reduced	$ -5,635,686	$ -5,763,779	$ -4,617,508	$ -4,722,483	$ -14,497,907	-14,827,503	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #11

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 511,394**	**$ 767,092**	**$ 531,957**	**$ 797,935**	**$ 145,470**	**$ 218,205**
Net daily cost per trip reduced	$ 10.22	$ 10.22	$ 10.63	$ 10.63	$ 2.91	$ 2.91
Net daily cost per VMT reduced	$ 0.75	$ 0.75	$ 0.78	$ 0.78	$ 0.21	$ 0.21
Net daily cost per Ton of CO reduced	$ 34,283	$ 34,285	$ 35,661	$ 35,664	$ 9,752	$ 9,753
Net daily cost per Ton of ROG reduced	$ 341,612	$ 341,538	$ 355,349	$ 355,271	$ 97,175	$ 97,254
Net daily cost per Ton of NOx reduced	$ 612,448	$ 612,207	$ 637,074	$ 636,823	$ 174,216	$ 174,148
Net daily cost per Ton of PM reduced	$ 34,092,923	$ 34,867,961	$35,463,782	$ 36,629,977	$ 9,698,020	$ 9,918,496
Total daily benefit	**$ 20,563**	**$ 30,847**	**0**	**0**	**$ 547,564**	**$ 821,351**
Net daily benefit per trip reduced	$ 0.41	$ 0.41	0	0	$ 10.95	$ 10.95
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 0.80	$ 0.80
Net daily benefit per Ton of CO reduced	$ 1,378	$ 1,379	0	0	$ 36,707	$ 36,710
Net daily benefit per Ton of ROG reduced	$ 13,736	$ 13,733	0	0	$ 365,775	$ 365,695
Net daily benefit per Ton of NOx reduced	$ 24,626	$ 24,616	0	0	$ 655,766	$ 655,508
Net daily benefit per Ton of PM reduced	$ 1,370,859	$ 1,402,016	0	0	$ 36,504,298	$ 37,334,148
Total daily cost-benefit	**$ 490,831**	**$ 736,845**	**$ 531,957**	**$ 797,935**	**$ -402,09**	**$ -603,14**
Net daily cost-benefit per trip reduced	$ 9.81	$ 9.81	$ 10.63	$ 10.63	$ -8.04	$ -8.04
Net daily cost-benefit per VMT reduced	$ 0.72	$ 0.72	$ 0.78	$ 0.78	$ -0.59	$ -0.59
Net daily cost-benefit per Ton of CO reduced	$ 32,904	$ 32,907	$ 35,661	$ 35,664	$ -26,955	$ -26,957
Net daily cost-benefit per Ton of ROG reduced	$ 327,876	$ 327,805	$ 355,349	$ 355,271	$ -268,600	$ -268,542
Net daily cost-benefit per Ton of NOx reduced	$ 587,821	$ 587,590	$ 637,074	$ 636,823	$ -481,550	$ -481,360
Net daily cost-benefit per Ton of PM reduced	$ 32,722,063	$ 33,465,944	$ 35,463,782	$ 36,269,977	$ -26,806,278	$ -27,415,653

TCM #12 (Vanpool subsidy)

DESCRIPTION OF MEASURE:

- A $1 per commute trip per day subsidy for vanpoolers.

Assumptions:

- Commuters affected include 867,209 employees
  - commuters not affected by regulation xv
  - commuters who work for employers with 50-99
  - commuters who travel more than 11 miles each direction to work.

  18.2% Of employees in los angeles county meet the above criterion

- Former mode of travel is assumed to be similar to those found elsewhere in major urban areas. Likely outcomes presented represent range of net vehicle trips reduced adjusted for formal mode use and park-and-ride travel.

- Low end range reflects the standard effectiveness of such a measure in Los Angeles County

- High end range reflects implementation of other measures in concert with this measure including: marketing, ridematching, preferential free parking for vanpools and parking pricing

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	20,223	30,335	12,134	18,201	32,357	48,536
Daily VMT reduction	752,304	1,128,456	451,832	677,073	1,203,686	1,805,529
Daily CO reduction (Tons/Day)	11.614	17.420	5.425	8.137	17.038	25.557
Daily NOx reduction (Tons/Day)	0.719	1.07	0.512	0.768	1.231	1.847
Daily ROG reduction (Tons/Day)	1.393	2.090	0.693	1.039	2.086	3.129
Daily PM reduction (Tons/Day)	0.017	0.025	0.010	0.015	0.027	0.040
Daily tire wear reduction (Tons/Day)	0.166	0.249	0.100	0.149	0.265	0.398

Costs and Benefits of TCM #12

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 112,005	$ 168,006	$ 117,651	$ 117,651	$ 35,593	$ 53,389	$ 0	$ 0
Daily cost per trip reduced	$ 3.46	$ 3.46	$ 3.64	$ 2.42	$ 1.10	$ 1.10	n/a	n/a
Daily cost per VMT reduced	$ 0.09	$ 0.09	$ 0.10	$ 0.07	$ 0.03	$ 0.03	n/a	n/a
Daily cost per Ton of CO reduced	$ 6,574	$ 6,574	$ 6,905	$ 4,603	$ 2,089	$ 2,099	n/a	n/a
Daily cost per Ton of ROG reduced	$ 53,694	$ 53,693	$ 56,400	$ 37,600	$ 17,063	$ 17,062	n/a	n/a
Daily cost per Ton of NOx reduced	$ 90,987	$ 91,011	$ 95,573	$ 63,733	$ 28,914	$ 28,921	n/a	n/a
Daily cost per ton of PM reduced	$ 4,148,333	$ 4,200,144	$ 4,357,438	$ 2,941,270	$ 1,318,248	$ 1,334,712	n/a	n/a
Total daily benefit	$ 161,444	$ 242,166	$ 179,208	$ 268,809	$ 157,466	$ 236,196	$ 54,224	$ 81,337
Daily benefit per trip reduced	$ 4.99	$ 4.99	$ 5.54	$ 5.54	$ 4.87	$ 4.87	n/a	n/a
Daily benefit per VMT reduced	$ 0.13	$ 0.13	$ 0.15	$ 0.15	$ 0.13	$ 0.13	n/a	n/a
Daily benefit per Ton of CO reduced	$ 9,475	$ 9,476	$ 10,518	$ 10,518	$ 9,241	$ 9,242	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 77,394	$ 77,394	$ 85,910	$ 85,909	$ 75,486	$ 75,486	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 131,149	$ 131,184	$ 145,579	$ 145,617	$ 127,917	$ 127,950	n/a	n/a
Daily benefit per Ton of PM reduced	$ 5,979,423	$ 6,054,151	$ 6,637,333	$ 6,720,230	$ 5,832,057	$ 5,904,897	n/a	n/a
Total daily cost-benefit-benefit	$ -49,439	$ -74,160	$ -61,557	$ -151,158	$ -121,873	$ -200,603	$ -54,224	$ -81,337
Daily cost-benefit per trip reduced	$ -1.53	$ -1.53	$ -1.90	$ -3.11	$ -3.77	$ -4.13	n/a	n/a
Daily cost-benefit per VMT reduced	$ -0.04	$ -0.04	$ -0.05	$ -0.08	$ -0.13	$ -0.13	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ -2,901	$ -2,902	$ -3,612	$ -5,915	$ -7,153	$ -7,849	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ -23,700	$ -23,701	$ -29,510	$ -48,309	$ -58,424	$ -64,111	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ -40,162	$ -40,173	$ -50,006	$ -81,884	$ -99,003	$ -108,669	n/a	n/a
Daily cost-benefit per Ton of PM reduced	$ -1,831,090	$ -1,854,00	$ -2,279,896	$ -3,778,960	$ -4,513,809	$ -5,015,079	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #12

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 516,173**	**$ 774,254**	**$ 552,342**	**$ 828,508**	**$ 265,249**	**$ 339,045**
Net daily cost per trip reduced	$ 15.95	$ 15.95	$ 17.07	$ 17.07	$ 8.20	$ 6.99
Net daily cost per VMT reduced	$ 0.43	$ 0.43	$ 0.46	$ 0.46	$ 0.22	$ 0.19
Net daily cost per Ton of CO reduced	$ 30,294	$ 30,295	$ 32,416	$ 32,418	$ 15,567	$ 13,266
Net daily cost per Ton of ROG reduced	$ 247,446	$ 247,445	$ 264,785	$ 264,784	$ 127,157	$ 108,356
Net daily cost per Ton of NOx reduced	$ 419,312	$ 419,423	$ 448,694	$ 448,813	$ 215,474	$ 183,665
Net daily cost per Ton of PM reduced	$ 19,117,528	$ 19,356,352	$ 20,457,127	$ 20,712,698	$ 9,824,019	$ 8,476,127
Total daily benefit	**$ 36,169**	**$ 54,254**	**0**	**0**	**$ 552,342**	**$ 828,508**
Net daily benefit per trip reduced	$ 1.12	$ 1.12	0	0	$ 17.07	$ 17.07
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 0.46	$ 0.46
Net daily benefit per Ton of CO reduced	$ 2,123	$ 2,123	0	0	$ 32,416	$ 32,418
Net daily benefit per Ton of ROG reduced	$ 17,339	$ 17,339	0	0	$ 264,785	$ 264,784
Net daily benefit per Ton of NOx reduced	$ 29,382	$ 29,390	0	0	$ 448,694	$ 448,813
Net daily benefit per Ton of PM reduced	$ 1,339,599	$ 1,356,346	0	0	$ 20,457,127	$ 20,712,698
Total daily cost-benefit	**$ 480,004**	**$ 720,000**	**$ 552,342**	**$ 828,508**	**$ -287,09**	**$ -489,46**
Net daily cost-benefit per trip reduced	$ 14.83	$ 14.83	$ 17.07	$ 17.07	$ -8.87	$ -10.08
Net daily cost-benefit per VMT reduced	$ 0.40	$ 0.40	$ 0.46	$ 0.46	$ -0.24	$ -0.27
Net daily cost-benefit per Ton of CO reduced	$ 28,171	$ 28,172	$ 32,416	$ 32,418	$ -16,849	$ -19,152
Net daily cost-benefit per Ton of ROG reduced	$ 230,107	$ 230,106	$ 264,784	$ 264,784	$ -137,629	$ -156,428
Net daily cost-benefit per Ton of NOx reduced	$ 389,930	$ 390,033	$ 448,694	$ 448,813	$ -233,220	$ -265,148
Net daily cost-benefit per Ton of PM reduced	$ 17,777,929	$ 18,000,006	$ 20,457,127	$ 20,712,698	$ -10,633,108	$ -12,236,571

TCM #13 (Carpool subsidy)

DESCRIPTION OF MEASURE:

- A $1 per commute trip per day subsidy for carpoolers

Assumptions:

- 20% of employees working for employers with 25-99 employees are likely to be affected by this measure (922,562 employees).
- The former mode of carpoolers is assumed to be similar to those found elsewhere in the SCAB region.
- Likely outcomes presented represent net commute vehicle trips reduced adjusted for former mode use and park-and-ride travel.
- Low end range reflects the standard effectiveness of such a measure in Los Angeles County
- High end range reflects implementation of other measures in concert with other measures including: parking pricing and ridematching services.

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	27,779	41,669	16,667	25,001	44,447	66,670
Daily VMT reduction	361,129	541,693	216,677	325,016	577,806	866,709
Daily CO reduction (Tons/Day)	8.839	13.259	4.121	6.182	12.960	19.44
Daily NOx reduction (Tons/Day)	0.424	0.637	0.290	0.435	0.715	1.072
Daily ROG reduction (Tons/Day)	0.854	1.281	0.431	0.647	1.286	1.929
Daily PM reduction (Tons/Day)	0.008	0.012	0.005	0.007	0.013	0.019
Daily tire wear reduction (Tons/Day)	0.080	0.119	0.048	0.072	0.127	0.191

Costs and Benefits of TCM #13

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 68,638	$ 0	$ 0	$ 0	$ 48,891	$ 73,335	$ 0	$ 0
Daily cost per trip reduced	$ 1.54	$ 0	$ 0	$ 0	$ 1.10	$ 1.10	n/a	n/a
Daily cost per VMT reduced	$ 0.12	$ 0	$ 0	$ 0	$ 0.08	$ 0.08	n/a	n/a
Daily cost per Ton of CO reduced	$ 5,296	$ 0	$ 0	$ 0	$ 3,772	$ 2,515	n/a	n/a
Daily cost per Ton of ROG reduced	$ 53,415	$ 0	$ 0	$ 0	$ 38,047	$ 25,358	n/a	n/a
Daily cost per Ton of NOx reduced	$ 96,132	$ 0	$ 0	$ 0	$ 68,474	$ 45,607	n/a	n/a
Daily cost per ton of PM reduced	$ 5,279,868	$ 0	$ 0	$ 0	$ 3,760,815	$ 2,573,189	n/a	n/a
Total daily benefit	$ 85,629	$ 0	$ 92,311	$ 138,464	$ 219,146	$ 328,715	$ 26,029	$ 39,044
Daily benefit per trip reduced	$ 1.93	$ 0	$ 2.08	$ 2.08	$ 4.93	$ 4.93	n/a	n/a
Daily benefit per VMT reduced	$ 0.15	$ 0	$ 0.16	$ 0.16	$ 0.38	$ 0.38	n/a	n/a
Daily benefit per Ton of CO reduced	$ 6,607	$ 0	$ 7,123	$ 7,122	$ 16,909	$ 16,908	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 66,637	$ 0	$ 71,837	$ 71,818	$ 170,542	$ 170,495	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 119,929	$ 0	$ 128,287	$ 129,164	$ 306,928	$ 306,637	n/a	n/a
Daily benefit per Ton of PM reduced	$ 6,586,844	$ 0	$ 7,100,840	$ 7,287,595	$ 16,857,420	$ 17,300,777	n/a	n/a
Total daily cost-benefit-benefit	$ -16,991	$ 0	$ -92,311	$ -138,464	$ -170,256	$ -255,380	$ -26,029	$ -39,044
Daily cost-benefit per trip reduced	$ -0.38	$ 0	$ -2.08	$ -2.08	$ -3.83	$ -3.83	n/a	n/a
Daily cost-benefit per VMT reduced	$ -0.03	$ 0	$ -0.16	$ -0.16	$ -0.29	$ -0.29	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ -1,311	$ 0	$ -7,123	$ -7,122	$ -13,137	$ -13,136	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ -132,22	$ 0	$ -71,837	$ -71,818	$ -132,495	$ -132,458	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ -237,96	$ 0	$ -129,287	$ -129,614	$ -238,454	$ -238,228	n/a	n/a
Daily cost-benefit per Ton of PM reduced	$ -1,306,976	$ 0	$ -7,100,840	$ -7,287,595	$ -13,096,605	$ -13,441,051	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #13

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 405,753**	**$ 480,180**	**$ 423,116**	**$ 506,223**	**$ 117,529**	**$ 73,335**
Net daily cost per trip reduced	$ 9.13	$ 7.20	$ 9.52	$ 7.59	$ 2.64	$ 1.10
Net daily cost per VMT reduced	$ 0.70	$ 0.55	$ 0.73	$ 0.58	$ 0.20	$ 0.08
Net daily cost per Ton of CO reduced	$ 31,308	$ 24,699	$ 32,647	$ 26,039	$ 9,069	$ 3,772
Net daily cost per Ton of ROG reduced	$ 315,761	$ 249,056	$ 329,273	$ 262,564	$ 91,462	$ 38,037
Net daily cost per Ton of NOx reduced	$ 568,282	$ 447,929	$ 592,599	$ 472,223	$ 164,606	$ 68,409
Net daily cost per Ton of PM reduced	$ 31,211,804	$ 25,272,616	$ 32,547,365	$ 26,643,326	$ 9,040,684	$ 3,859,726
Total daily benefit	**$ 17,362**	**$ 26,043**	**0**	**0**	**$ 371,057**	**$ 428,135**
Net daily benefit per trip reduced	$ 0.39	$ 0.39	0	0	$ 8.35	$ 6.42
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 0.64	$ 0.49
Net daily benefit per Ton of CO reduced	$ 1,340	$ 1,340	0	0	$ 28,631	$ 22,022
Net daily benefit per Ton of ROG reduced	$ 13,512	$ 13,508	0	0	$ 288,760	$ 222,062
Net daily benefit per Ton of NOx reduced	$ 24,317	$ 24,294	0	0	$ 519,688	$ 399,380
Net daily benefit per Ton of PM reduced	$ 1,335,561	$ 1,370,710	0	0	$ 28,542,845	$ 22,533,419
Total daily cost-benefit	**$ 338,391**	**$ 454,136**	**$ 423,116**	**$ 506,223**	**$-253,528**	**$ -354,80**
Net daily cost-benefit per trip reduced	$ 8.74	$ 6.81	$ 9.52	$ 7.59	$ -5.70	$ -5.32
Net daily cost-benefit per VMT reduced	$ 0.67	$ 0.52	$ 0.73	$ 0.58	$ -0.44	$ -0.41
Net daily cost-benefit per Ton of CO reduced	$ 29,968	$ 23,560	$ 32,648	$ 26,039	$ -19,562	$ -18,250
Net daily cost-benefit per Ton of ROG reduced	$ 302,250	$ 235,548	$ 329,273	$ 262,563	$ -197,298	$ -184,025
Net daily cost-benefit per Ton of NOx reduced	$ 543,965	$ 423,635	$ 592,599	$ 472,223	$ -355,081	$ -330,970
Net daily cost-benefit per Ton of PM reduced	$ 29,876,243	$ 23,901,907	$ 32,547,365	$ 26,643,326	$ -19,502,161	$ -18,673,692

TCM #14 (Bicycling subsidy)

DESCRIPTION OF MEASURE:

- A $1 per commute trip per day subsidy for bicyclists

Assumptions:

- Commuters affected are those who travel less than 3 miles each direction to work.
- 8.8% Of employees in Los Angeles County are affected (405,927)
- Former mode use for cyclists is assumed to be similar to those found elsewhere in major urban areas.
- Likely outcomes presented represent range of net vehicle trips reduced adjusted for former mode use.
- Low end range reflect the standard effectiveness of such a measure in Los Angeles County
- High end range reflects implementation of other measures in concert with this measure including: bicycle improvements (showers, lockers, bicycle lanes) and parking pricing

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	5,432	10,865	3,259	6,519	8,692	17,384
Daily VMT reduction	16,297	32,594	9,778	19,557	26,075	52,151
Daily CO reduction (Tons/Day)	1.154	2.307	0.537	1.074	1.690	3.381
Daily NOx reduction (Tons/Day)	0.037	0.075	0.023	0.047	0.061	0.122
Daily ROG reduction (Tons/Day)	0.000	0.001	0.000	0.000	0.001	0.001
Daily PM reduction (Tons/Day)	0.000	0.001	0.000	0.000	0.001	0.001
Daily tire wear reduction (Tons/Day)	0.004	0.007	0.002	0.004	0.006	0.011

Costs and Benefits of TCM #14

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 4,181	$ 8.362	$ 14,856	$ 29,714	$ 66,868	$ 76,429	0	0
Daily cost per trip reduced	$ 0.48	$ 0.48	$ 1.71	$ 1.71	$ 7.69	$ 4.4	n/a	n/a
Daily cost per VMT reduced	$ 0.16	$ 0.16	$ 0.57	$ 0.57	$ 2.56	$ 1.47	n/a	n/a
Daily cost per Ton of CO reduced	$ 2,472	$ 2,473	$ 8,785	$ 8,788	$ 39,543	$ 22,605	n/a	n/a
Daily cost per Ton of ROG reduced	$ 33,989	$ 33,717	$ 120,781	$ 119,813	$ 543642	$ 308,182	n/a	n/a
Daily cost per Ton of NOx reduced	$ 69,678	$ 68,539	$ 247,600	$ 243,555	$ 1,114,466	$ 626,469	n/a	n/a
Daily cost per ton of PM reduced	err	$ 8,361,789	err	$ 29,713,725	err	$ 76,429,162	n/a	n/a
Total daily benefit	$ 13,331	$ 26,664	$ 18,051	$ 36,103	$ 42,295	$ 84,590	$ 1,175	$ 2,349
Daily benefit per trip reduced	$ 1.53	$ 1.53	$ 2.08	$ 2.08	$ 4.87	$ 4.87	n/a	n/a
Daily benefit per VMT reduced	$ 0.51	$ 0.51	$ 0.69	$ 0.69	$ 1.62	$ 1.62	n/a	n/a
Daily benefit per Ton of CO reduced	$ 7,884	$ 7,886	$ 10,674	$ 10,678	$ 25,012	$ 25,021	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 108,384	$ 107,515	$ 146,752	$ 245,577	$ 343,860	$ 341,107	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 222,187	$ 218,555	$ 300,842	$ 295,927	$ 704,913	$ 693,397	n/a	n/a
Daily benefit per Ton of PM reduced	err	$ 26,663,698	err	$ 36,103,154	err	$ 84,594,474	n/a	n/a
Total daily cost-benefit-benefit	$ -9,151	$ -18,302	$ -3,195	$ -6,389	$ 24,573	$ -8,165	$ -1,175	$ -2,349
Daily cost-benefit per trip reduced	$ -1.05	$ -1.05	$ 0.37	$ -0.37	$ 2.83	$ -0.47	n/a	n/a
Daily cost-benefit per VMT reduced	$ -0.35	$ -0.35	$ 0.12	$ -0.12	$ 0.94	$ -0.16	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ -5,411	$ -5,413	$ -1,889	$ -1,890	$ 14,532	$ -2,415	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ -74,395	$ -73,798	$ -25,972	$ -25,764	$ 199,782	$ -32,925	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ -152,510	$ -150,016	$ -53,242	$ -52,372	$ 409,553	$ -66,929	n/a	n/a
Daily cost-benefit per Ton of PM reduced	err	$ -18,301,90	err	$ -6,389,428	err	$ -8,165,312	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #14

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 74,068**	**$ 148,144**	**$ 74,851**	**$ 149,771**	**$ 85,905**	**$ 114,505**
Net daily cost per trip reduced	$ 8.52	$ 8.52	$ 8.61	$ 8.61	$ 9.88	$ 6.5
Net daily cost per VMT reduced	$ 2.84	$ 2.84	$ 2.87	$ 2.87	$ 3.29	$ 2.2
Net daily cost per Ton of CO reduced	$ 43,801	$ 43,816	$ 44,264	$ 44,280	$ 50,801	$ 33,867
Net daily cost per Ton of ROG reduced	$ 602,176	$ 597,353	$ 608,547	$ 603,672	$ 698,412	$ 461,712
Net daily cost per Ton of NOx reduced	$ 1,234,462	$ 1,214,292	$ 1,247,520	$ 1,227,136	$ 1,431,744	$ 938,563
Net daily cost per Ton of PM reduced	err	$ 148,143,576	err	$ 149,710,628	err	$ 114,504,677
Total daily benefit	**$ 784**	**$ 1,567**	**0**	**0**	**$ 74,851**	**$ 149,711**
Net daily benefit per trip reduced	$ 0.09	$ 0.09	0	0	$ 8.61	$ 8.61
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 0.13	$ 0.17
Net daily benefit per Ton of CO reduced	$ 463	$ 463	0	0	$ 44,624	$ 44,280
Net daily benefit per Ton of ROG reduced	$ 6,370	$ 6,319	0	0	$ 608,547	$ 603,672
Net daily benefit per Ton of NOx reduced	$ 13,059	$ 12,845	0	0	$ 1,247,520	$ 1,227,136
Net daily benefit per Ton of PM reduced	err	$ 1,567,052	0	0	err	$ 149,710,628
Total daily cost-benefit	**$ 73,284**	**$ 159,972**	**$ 74,851**	**$ 149,711**	**$ 11,053**	**$ -35,206**
Net daily cost-benefit per trip reduced	$ 8.43	$ 8.43	$ 8.61	$ 8.61	$ 1.27	$ -2.03
Net daily cost-benefit per VMT reduced	$ 2.81	$ 2.81	$ 2.87	$ 2.87	$ 0.42	$ -0.68
Net daily cost-benefit per Ton of CO reduced	$ 43,338	$ 43,353	$ 44,264	$ 44,280	$ 6,537	$ -10,413
Net daily cost-benefit per Ton of ROG reduced	$ 595,806	$ 591,034	$ 608,547	$ 603,672	$ 89,865	$ -141,959
Net daily cost-benefit per Ton of NOx reduced	$ 1,221,403	$ 1,201,447	$ 1,247,520	$ 1,227,136	$ 184,223	$ -288,573
Net daily cost-benefit per Ton of PM reduced	err	$ 146,576,523	err	$ 149,710,628	err	$ -35,205,951

TCM #15 (Walking subsidy)

DESCRIPTION OF MEASURE:

- A $1 per commute trip per day subsidy for walkers

Assumptions:

- Commuters affected are those who travel less than 3 miles each direction to work
- 8.8% Of employees in Los Angeles County are affected (405,927 employees)
- Former mode use for walkers is assumed to be similar to those found elsewhere in major urban areas.
- Likely outcomes presented represent range of net vehicle trips reduced adjusted for former mode use
- Low range end reflects the standard effectiveness of such a measure in Los Angeles County
- High range end reflects implementation of other measures in concert with this measure including: pedestrian improvement and parking pricing.

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	5,432	10,865	3,259	6,519	8,692	17,384
Daily VMT reduction	10,865	21,729	6,519	13,038	17,384	34,767
Daily CO reduction (Tons/Day)	1.096	2.192	0.510	1.020	1.606	3.212
Daily NOx reduction (Tons/Day)	0.033	0.066	0.020	0.040	0.053	0.106
Daily ROG reduction (Tons/Day)	0.073	0.146	0.038	0.076	0.111	0.222
Daily PM reduction (Tons/Day)	0.000	0.000	0.000	0.000	0.000	0.001
Daily tire wear reduction (Tons/Day)	0.002	0.005	0.001	0.003	0.004	0.008

Costs and Benefits of TCM #15

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 3,844	$ 7,689	$ 445	$ 930	$ 55,128	$ 64,685	0	0
Daily cost per trip reduced	$ 0.44	$ 0.44	$ 0.05	$ 0.05	$ 6.34	$ 3.7	n/a	n/a
Daily cost per VMT reduced	$ 0.22	$ 0.22	$ 0.03	$ 0.03	$ 3.17	$ 1.8	n/a	n/a
Daily cost per Ton of CO reduced	$ 2,394	$ 2,394	$ 290	$ 290	$ 34,326	$ 20,319	n/a	n/a
Daily cost per Ton of ROG reduced	$ 34,631	$ 34,633	$ 4,193	$ 4,193	$ 496,646	$ 291,,331	n/a	n/a
Daily cost per Ton of NOx reduced	$ 72,530	$ 72,534	$ 8,782	$ 8,782	$ 1,040,144	$ 610,272	n/a	n/a
Daily cost per ton of PM reduced	err	err	err	err	err	err	n/a	n/a
Total daily benefit	$ 12,453	$ 24,907	$ 18,051	$ 36,102	$ 42,295	$ 84,594	$ 783	$ 1,566
Daily benefit per trip reduced	$ 1.43	$ 2.2	$ 2.08	$ 2.08	$ 4.87	$ 4.87	n/a	n/a
Daily benefit per VMT reduced	$ 0.72	$ 1.1	$ 1.04	$ 1.04	$ 2.43	$ 2.43	n/a	n/a
Daily benefit per Ton of CO reduced	$ 7,754	$ 7,754	$ 11,239	$ 11,240	$ 26,335	$ 26,337	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 112,190	$ 112,195	$ 162,617	$ 162,627	$ 381,034	$ 381,056	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 234,964	$ 234,975	$ 340,576	$ 340,596	$ 798,015	$ 798,061	n/a	n/a
Daily benefit per Ton of PM reduced	err	err	err	err	er	err	n/a	n/a
Total daily cost-benefit	$ -8,609	$ -17,219	$ -17,585	$ -35,172	$ 12,833	$ -19,90,6	$ -783	$ -1,566
Daily cost-benefit per trip reduced	$ -0.99	$ -0.99	$ 2.02	$ -2.02	$ 1.48	$ -1.15	n/a	n/a
Daily cost-benefit per VMT reduced	$ -0.50	$ -0.50	$ 1.01	$ -1.01	$ 0.74	$ -0.57	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ -5,361	$ -5,361	$ -10,950	$ -10,950	$ 7,991	$ -6,197	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ -77,562	$ -77,562	$ -158,424	$ -158,443	$ 115,611	$ -89,665	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ -162,441	$ -162,440	$ -331,794	$ -331,813	$ 242,129	$ -187,789	n/a	n/a
Daily cost-benefit per Ton of PM reduced	err	err	err	err	err	err	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #15

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	$ 73,059	$ 146,126	$ 73,582	$ 147,171	59,437	73,308
Net daily cost per trip reduced	$ 8.41	$ 8.41	$ 8.47	$ 8.47	6.84	4.22
Net daily cost per VMT reduced	$ 4.20	$ 4.20	$ 4.23	$ 4.23	3.42	2.11
Net daily cost per Ton of CO reduced	$ 45,491	$ 45,494	$ 45,817	$ 45,819	$ 37,009	$ 22,823
Net daily cost per Ton of ROG reduced	$ 658,191	$ 658,227	$ 662,897	$ 662,933	$ 535,470	$ 330,218
Net daily cost per Ton of NOx reduced	$ 1,378,475	$ 1,378,551	$ 1,388,331	$ 1,338,407	$ 1,121,457	$ 691,589
Net daily cost per Ton of PM reduced	err	err	e,rr	err	err	err
Total daily benefit	**$ 522**	**$ 1,044**	**0**	**0**	**$ 73,581**	**$ 147,171**
Net daily benefit per trip reduced	$ 0.06	$ 0.06	0	0	$ 8.47	$ 8.47
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 4.23	$ 4.23
Net daily benefit per Ton of CO reduced	$ 325	$ 325	0	0	$ 45,817	$ 45,819
Net daily benefit per Ton of ROG reduced	$ 4,706	$ 4,706	0	0	$ 662,897	$ 662,933
Net daily benefit per Ton of NOx reduced	$ 9,856	$ 9,856	0	0	$ 1,388,331	$ 1,388,407
Net daily benefit per Ton of PM reduced	err	err	0	0	err	err
Total daily cost-benefit	**$ 72,537**	**$ 145,082**	**$ 73,582**	**$**	**$ -14,144**	**$ -73,863**
Net daily cost-benefit per trip reduced	$ 8.35	$ 8.35	$ 8.47	$ 8.47	$ -1.63	$ -4.25
Net daily cost-benefit per VMT reduced	$ 4.17	$ 4.17	$ 4.23	$ 4.23	$ -0.81	$ -2.12
Net daily cost-benefit per Ton of CO reduced	$ 45,166	$ 45,169	$ 45,817	$ 45,819	$ -8,807	$ -22,996
Net daily cost-benefit per Ton of ROG reduced	$ 653,485	$ 653,521	$ 662,897	$ 662,933	$ -127,427	$ -332,715
Net daily cost-benefit per Ton of NOx reduced	$ 1,368,619	$ 1,368,696	$ 1,388,331	$ 1,388,407	$ -266,875	$ -696,818
Net daily cost-benefit per Ton of PM reduced	err	ERR	err	err	err	err

TCM #16 (Buspool subsidy)

DESCRIPTION OF MEASURE:

- Provide $1 per day per trip for buspool users

Assumptions:

- 10% of employee (461,280) are affected by this measure
- This TCM affects commute trips only
- Likely outcome presented represent the net vehicle trips adjusted for former mode use and park-and-ride travel
- Low end range reflects standard effectiveness in Los Angeles County
- High end range reflects implementation of this measure in concert with other measures including: feeder services, guaranteed ride hour and shuttle services during the day

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	13,013	19,655	7,862	11,793	20,965	31,448
Daily VMT reduction	305,309	457,963	183,185	274,778	488,494	732,741
Daily CO reduction (Tons/Day)	5.598	8.396	2.613	3.919	8.210	12.315
Daily NOx reduction (Tons/Day)	0.313	0.470	0.220	0.330	0.533	0.800
Daily ROG reduction (Tons/Day)	0.616	0.924	0.308	0.462	0.924	1.385
Daily PM reduction (Tons/Day)	0.007	0.010	0.004	0.006	0.011	0.016
Daily tire wear reduction (Tons/Day)	0.067	0.101	0.040	0.061	0.108	0.162

Costs and Benefits of TCM #16

Costs and Benefits	Private Sector		Individual		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 61,574	$ 61,574	$ 72,571	$ 108,857	$ 30,048	$ 41,584	0	0
Daily cost per trip reduced	$ 2.95	$ 1.96	$ 3.46	$ 3.46	$ 1.43	$ 1.32	n/a	n/a
Daily cost per VMT reduced	$ 0.13	$ 0.08	$ 0.15	$ 0.15	$ 0.06	$ 0.06	n/a	n/a
Daily cost per Ton of CO reduced	$ 7,521	$ 5,015	$ 8,838	$ 8,840	$ 3,660	$ 3,376	n/a	n/a
Daily cost per Ton of ROG reduced	$ 66,834	$ 44,556	$ 78,540	$ 78,541	$ 32,520	$ 30,000	n/a	n/a
Daily cost per Ton of NOx reduced	$ 115,862	$ 77,193	$ 136,156	$ 136,073	$ 56,376	$ 51,974	n/a	n/a
Daily cost per ton of PM reduced	$ 5,614,019	$ 3,859,638	$ 6,597,378	$ 6,803,654	$ 2,731,657	$ 2,598,720	n/a	n/a
Total daily benefit	$ 43,543	$ 65,313	$ 75,161	$ 112,741	$ 150,656	$ 225,984	$ 22,006	$ 33,005
Daily benefit per trip reduced	$ 2.08	$ 2.08	$ 3.59	$ 3.59	$ 7.19	$ 7.1	n/a	n/a
Daily benefit per VMT reduced	$ 0.09	$ 0.09	$ 0.15	$ 0.15	$ 0.31	$ 0.31	n/a	n/a
Daily benefit per Ton of CO reduced	$ 5,303	$ 5,304	$ 9,154	$ 9,155	$ 18,348	$ 18,351	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 47,124	$ 47,125	$ 81,343	$ 81,343	$ 163,047	$ 163,050	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 81,694	$ 81,644	$ 141,014	$ 140,927	$ 282,656	$ 282,484	n/a	n/a
Daily benefit per Ton of PM reduced	$ 3,958,427	$ 4,082,192	$ 6,832,774	$ 7,046,336	$ 13,695,981	$ 14,124,205	n/a	n/a
Total daily cost-benefit-benefit	$ 18,212	$ -3,569	$ -2,589	$ -3,883	$ -120,608	$ -184,400	$ -22,006	$ -33,005
Daily cost-benefit per trip reduced	$ 0.87	$ -0.1	$ -0.12	$ -0.12	$ -5.75	$ -5.8	n/a	n/a
Daily cost-benefit per VMT reduced	$ 0.04	$ -0.0	$ -0.01	$ -0.01	$ -0.25	$ -0.2	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ 2,218	$ -289	$ -315	$ -315	$ -14,689	$ -14,974	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ 19,709	$ -2,569	$ -2,802	$ -2,802	$ -130,528	$ -133,050	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ 34,168	$ -4,451	$ -4,858	$ -4,854	$ -226,281	$ -230,510	n/a	n/a
Daily cost-benefit per Ton of PM reduced	$ 1,655,593	$ -222,554	$ -235,396	$ -242,682	$ -10,964,324	$ -11,525,484	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #16

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 276,686**	**$ 415,035**	**$ 291,365**	**$ 437,053**	**$ 164,374**	**$ 212,192**
Net daily cost per trip reduced	$ 13.20	$ 13.20	$ 13.9	$ 13.9	$ 7.84	$ 6.75
Net daily cost per VMT reduced	$ 0.57	$ 0.57	$ 0.6	$ 0.6	$ 0.34	$ 0.29
Net daily cost per Ton of CO reduced	$ 33,697	$ 33,702	$ 35,485	$ 35,489	$ 20,019	$ 17,230
Net daily cost per Ton of ROG reduced	$ 299,444	$ 299,448	$ 315,330	$ 315,334	$ 177,893	$ 153,097
Net daily cost per Ton of NOx reduced	$ 519,111	$ 518,794	$ 546,651	$ 546,316	$ 308,393	$ 265,240
Net daily cost per Ton of PM reduced	$ 25,153,309	$ 25,939,678	$ 26,487,730	$ 27,315,798	$ 14,943,054	$ 13,262,013
Total daily benefit	**$ 14,679**	**$ 22,015**	**0**	**0**	**$ 291,365**	**$437,053**
Net daily benefit per trip reduced	$ 0.70	$ 0.7	0	0	$ 13.9	$ 13.9
Net daily benefit per VMT reduced	$ 0.24	$ 0.2	0	0	$ 0.6	$ 0.6
Net daily benefit per Ton of CO reduced	$ 1,788	$ 1,788	0	0	$ 35,485	$ 35,489
Net daily benefit per Ton of ROG reduced	$ 15,886	$ 15,886	0	0	$ 315,330	$ 315,334
Net daily benefit per Ton of NOx reduced	$ 27,540	$ 27,522	0	0	$ 546,651	$ 546,316
Net daily benefit per Ton of PM reduced	$ 1,334,421	$ 1,376,120	0	0	$ 26,487,730	$ 27,315,798
Total daily cost-benefit	**$ 262,008**	**$ 393,017**	**$ 291,365**	**$ 437,053**	**$ -126,991**	$ -224,861
Net daily cost-benefit per trip reduced	$ 12.50	$ 12.50	$ 13.9	$ 13.9	$ -6.06	$ -7.15
Net daily cost-benefit per VMT reduced	$ 0.54	$ 0.54	$ 0.6	$ 0.6	$ -0.26	$ -0.31
Net daily cost-benefit per Ton of CO reduced	$ 31,909	$ 31,914	$ 35,485	$ 35,489	$ -15,466	$ -18,259
Net daily cost-benefit per Ton of ROG reduced	$ 283,558	$ 283,562	$ 315,330	$ 315,334	$ -137,437	$ -162,237
Net daily cost-benefit per Ton of NOx reduced	$ 491,572	$ 491,271	$ 546,651	$ 546,316	$ -238,258	$ -281,076
Net daily cost-benefit per Ton of PM reduced	$ 23,818,888	$ 24,563,558	$ 26,487,730	$ 27,315,798	$ -11,544,676	$ -14,053,78

TCM #17 (Transit service increase)

DESCRIPTION OF MEASURE:

- A 10% decrease in transit service headways countywide.

Assumptions:

- Commuters affected would be those living within 20 miles of work who are likely to take transit based on historical mode split in Los Angeles County.
- The former modes of new riders are assumed to be similar to those found elsewhere in major urban areas.
- Likely outcomes presented represent range of net vehicle trips adjusted for former transit riders and park-and-ride travel
- Low end range reflects standard effectiveness of such a measure in Los Angeles County
- High end range reflects implementation of other measures in concert with this measure including: subsidized monthly bus pass, parking pricing, and aggressive marketing

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	1,723	3,445	2,079	4,158	**3,802**	**7,604**
Daily VMT reduction	19,102	38,024	28,443	56,886	**47,545**	**95,090**
Daily CO reduction (Tons/Day)	0.513	1.026	0.526	1.052	**1.039**	**2.078**
Daily NOx reduction (Tons/Day)	0.024	0.047	0.038	0.075	**0.061**	**0.122**
Daily ROG reduction (Tons/Day)	0.048	0.096	0.056	0.111	**0.103**	**0.207**
Daily PM reduction (Tons/Day)	0.000	0.001	0.001	0.001	**0.001**	**0.002**
Daily tire wear reduction (Tons/Day)	0.004	0.008	0.006	0.013	**0.010**	**0.021**

Costs and Benefits of TCM #17

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 2,372	$ 4,744	$ 0	$ 0	$ 242,894	$ 242,894	0	0
Daily cost per trip reduced	$ 0.62	$ 0.62	$ 0	$ 0	$ 64	$ 32	n/a	n/a
Daily cost per VMT reduced	$ 0.05	$ 0.05	$ 0	$ 0	$ 5	$ 3	n/a	n/a
Daily cost per Ton of CO reduced	$ 2,283	$ 2,283	$ 0	$ 0	$ 233,755	$ 116,883	n/a	n/a
Daily cost per Ton of ROG reduced	$ 22,939	$ 22,744	$ 0	$ 0	$ 2,349,076	$ 1,164,403	n/a	n/a
Daily cost per Ton of NOx reduced	$ 38,693	$ 38,762	$ 0	$ 0	$ 3,962,390	$ 1,984,432	n/a	n/a
Daily cost per ton of PM reduced	$ 2,371,910	$ 2,259,259	$ 0	$ 0	$	$ 115,664,039	n/a	n/a
Total daily benefit	$ 4,804	$ 9,608	$ 8,772	$ 17,545	$ 20,869	$ 41,744	$ 2,446	$ 2,752
Daily benefit per trip reduced	$ 1.26	$ 1.26	$ 2.31	$ 2.31	$ 5.49	$ 5.49	n/a	n/a
Daily benefit per VMT reduced	$ 0.10	$ 0.10	$ 0.18	$ 0.18	$ 0.44	$ 0.44	n/a	n/a
Daily benefit per Ton of CO reduced	$ 4,624	$ 4,624	$ 8,441	$ 8,443	$ 20,084	$ 20,088	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 46,463	$ 46,061	$ 84,831	$ 84,110	$ 201,833	$ 200,117	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 78,374	$ 78,499	$ 143,092	$ 143,345	$ 340,449	$ 341,050	n/a	n/a
Daily benefit per Ton of PM reduced	$ 4,804,307	$ 4,575.359	$ 8,771,538	$ 8,354,945	$	$ 19,878,329	n/a	n/a
Total daily cost-benefit-benefit	$ -2,432	$ -4,864	$ -8,772	$ -17,545	$ 222,025	$ 201,150	$ 2,446	$ 2,752
Daily cost-benefit per trip reduced	$ -.64	$ -0.64	$ -2.31	$ -2.31	$ 58.41	$ 26.46	n/a	n/a
Daily cost-benefit per VMT reduced	$ -0.05	$ -0.05	$ -0.18	$ -0.18	$ 5	$ 2	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ -2,341	$ -2,341	$ -8,441	$ -8,443	$ 213,670	$ 96,795	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ -23,524	$ -23,316	$ -84,831	$ -84,110	$ 2,147,244	$ 964,286	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ -39,680	$ -39,737	$ -143,092	$ -143,345	$ 3,621,941	$ 1,643,382	n/a	n/a
Daily cost-benefit per Ton of PM reduced	$ -2,432,397	$-2,316,100	$ -8,771,538	$	$ 222,024,983	$ 95,785,711	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #17

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 34,213**	**$ 68,433**	**$ 34,519**	**$ 69,045**	**$ 245,266**	**$ 247,639**
Net daily cost per trip reduced	$ 9.00	$ 9.00	$ 9.08	$ 9.08	$ 64.53	$ 32.57
Net daily cost per VMT reduced	$ 0.72	$ 0.72	$ 0.73	$ 0.73	$ 5.16	$ 2.60
Net daily cost per Ton of CO reduced	$ 32,926	$ 32,930	$ 33,220	$ 33,225	$ 236,037	$ 119,166
Net daily cost per Ton of ROG reduced	$ 330,879	$ 328,057	$ 333,840	$ 330,992	$ 2,372,015	$ 1,187,147
Net daily cost per Ton of NOx reduced	$ 558,123	$ 559,091	$ 563,116	$ 564,093	$ 4,001,083	$ 2,023,194
Net daily cost per Ton of PM reduced	$	$ 32,586,995	$	$ 32,878,536		$ 117,923,299
Total daily benefit	**$ 306**	**$ 612**	**0**	**0**	**$ 36,891**	**$ 71,650**
Net daily benefit per trip reduced	$ 0.08	$ 0.08	0	0	$ 9.71	$ 9.42
Net daily benefit per VMT reduced	$ 0.01	$ 0.01	0	0	$ 0.78	$ 0.75
Net daily benefit per Ton of CO reduced	$ 295	$ 295	0	0	$ 35,503	$ 34,479
Net daily benefit per Ton of ROG reduced	$ 2,960	$ 2,935	0	0	$ 356,779	$ 343,480
Net daily benefit per Ton of NOx reduced	$ 4,994	$ 5,002	0	0	$ 601,810	$ 585,375
Net daily benefit per Ton of PM reduced	$ 306,112	$ 291,543	0	0		$ 34,118,976
Total daily cost-benefit	**$ 33,907**	**$ 67,820**	**$ 34,519**	**$ 69,045**	**$ 208,375**	**$ 175,989**
Net daily cost-benefit per trip reduced	$ 8.92	$ 8.92	$ 9.08	$ 9.08	$ 54.82	$ 23.15
Net daily cost-benefit per VMT reduced	$ 0.71	$ 0.71	$ 0.73	$ 1.45	$ 4.38	$ 1.85
Net daily cost-benefit per Ton of CO reduced	$ 32,631	$ 32,636	$ 33,220	$ 33,225	$ 200,534	$ 84,687
Net daily cost-benefit per Ton of ROG reduced	$ 327,919	$ 325,122	$ 333,840	$ 330,992	$ 2,015,237	$ 843,668
Net daily cost-benefit per Ton of NOx reduced	$ 553,129	$ 554,089	$ 563,116	$ 564,093	$ 3,399,273	$ 1,437,819
Net daily cost-benefit per Ton of PM reduced	$ 33,906,803	$ 32,295,452	$	$ 32,878,538	$ 208,375,455	$ 83,804,323

TCM #18 (Feeder services)

DESCRIPTION OF MEASURE:

- At major transit and rail stations where park-and-ride lots are limited a feeder services to and from these stations will result in elimination of short trips made by commuters to park-and-ride lots and will encourage more people to shift to transit mode

Assumptions:

- This TCM strategy affect commute trips only
- 5% (230,000) of employees are affected by this measure
- Average trip length is assumed to be 3-5 miles each way
- Likely outcome presented represent range of net vehicle trips adjusted for former mode use
- Low end range represent standard effectiveness in Los Angeles County
- High end range reflects implementation of other measures in concert with this measure including: improved transit services, ridesharing program and transit subsidy

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	1,157	2,315	694	1,389	**1,852**	**3,704**
Daily VMT reduction	5,787	11,575	3,472	6,945	**9,260**	**18,519**
Daily CO reduction (Tons/Day)	0.270	0.541	0.126	0.252	**0.396**	**0.792**
Daily NOx reduction (Tons/Day)	0.010	0.020	0.006	0.013	**0.016**	**0.033**
Daily ROG reduction (Tons/Day)	0.021	0.042	0.011	0.022	**0.032**	**0.064**
Daily PM reduction (Tons/Day)	0.000	0.000	0.000	0.000	**0.000**	**0.000**
Daily tire wear reduction (Tons/Day)	0.001	0.003	0.001	0.002	**0.002**	**0.004**

Costs and Benefits of TCM #18

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 0	$ 0	$ 0	$ 0	$ 13,892	$ 13,892	0	0
Daily cost per trip reduced	$ 0	$ 0	$ 0	$ 0	$ 7.50	$ 3.75	n/a	n/a
Daily cost per VMT reduced	$ 0	$ 0	$ 0	$ 0	$ 1.50	$ 0.75	n/a	n/a
Daily cost per Ton of CO reduced	$ 0	$ 0	$ 0	$ 0	$ 35,081	$ 17,518	n/a	n/a
Daily cost per Ton of ROG reduced	$ 0	$ 0	$ 0	$ 0	$ 434,127	$ 217,064	n/a	n/a
Daily cost per Ton of NOx reduced	$ 0	$ 0	$ 0	$ 0	$ 868,254	$ 420,972	n/a	n/a
Daily cost per ton of PM reduced	$ 0	$ 0	ERR	ERR	err	err	n/a	n/a
Total daily benefit	$ 2,790	$ 5,611	$ 3,846	$ 7,692	$ 9,939	$ 19,878	$ 417	$ 839
Daily benefit per trip reduced	$ 1.51	$ 1.51	$ 2.08	$ 2.08	$ 5.37	$ 5.37	n/a	n/a
Daily benefit per VMT reduced	$ 0.30	$ 0.30	$ 0.42	$ 0.41	$ 1.07	$ 1.07	n/a	n/a
Daily benefit per Ton of CO reduced	$ 7,046	$ 7,075	$ 9,713	$ 9,701	$ 25,098	$ 25,066	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 87,195	$ 87,667	$ 120,202	$ 120,202	$ 310,583	$ 310,583	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 174,389	$ 170,020	$ 240,404	$ 233,119	$ 621,167	$ 602,344	n/a	n/a
Daily benefit per Ton of PM reduced	err	err	err	err	$	err	n/a	n/a
Total daily cost-benefit	$ -2,790	$ -5,610	$ -3,846	$ -7,692	$ 3,953	$ -5,985	$ -417	$ -834
Daily cost-benefit per trip reduced	$ -1.51	$ -1.51	$ -2.08	$ -2.08	$ 2.13	$ -1.62	n/a	n/a
Daily cost-benefit per VMT reduced	$ -0.30	$ -0.30	$ -0.42	$ -0.41	$ 0.43	$ -0.32	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ -7,046	$ -7,075	$ -9,713	$ -9,701	$ 9,983	$ -7,548	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ -87,195	$ -87,667	$ -120,202	$ -120,202	$ 123,544	$ -93,520	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ -174,389	$ -170,020	$ -240,404	$ -233,119	$ 247,087	$ -181,372	n/a	n/a
Daily cost-benefit per Ton of PM reduced	err	err	err	err	err	err	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #18

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	$ 12,084	$ 24,203	$ 12,362	$ 24,760	$ 13,892	$ 13,892
Net daily cost per trip reduced	$ 6.52	$ 6.5	$ 6.68	$ 6.68	$ 7.50	$ 3.75
Net daily cost per VMT reduced	$ 1.30	$ 1.2	$ 1.34	$ 1.32	$ 1.50	$ 0.75
Net daily cost per Ton of CO reduced	$ 30,516	$ 30,521	$ 31,218	$ 31,223	$ 35,081	$ 17,518
Net daily cost per Ton of ROG reduced	$ 377,633	$ 378,175	$ 386,328	$ 386,871	$ 434,127	$ 217,064
Net daily cost per Ton of NOx reduced	$ 755,266	$ 733,431	$ 772,656	$ 750,295	$ 866,254	$ 420,972
Net daily cost per Ton of PM reduced	err	err	err	err	err	err
Total daily benefit	**$ 278**	**$ 555**	**0**	**0**	**$ 16,992**	**$ 34,020**
Net daily benefit per trip reduced	$ 0.15	$ 0.15	0	0	$ 9.18	$ 9.18
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 1.84	$ 1.84
Net daily benefit per Ton of CO reduced	$703	$ 702	0	0	$ 42,910	$ 42,900
Net daily benefit per Ton of ROG reduced	$8,695	$ 8,695	0	0	$ 531,015	$ 531,558
Net daily benefit per Ton of NOx reduced	$17,389	$ 16,864	0	0	$ 1,062,031	$ 1,030,901
Net daily benefit per Ton of PM reduced	err	err	0	0	err	err
Total daily cost-benefit	**$ 11,806**	**$ 23,648**	**$ 12,362**	**$ 24,760**	**$ -3,100**	**$ -20,128**
Net daily cost-benefit per trip reduced	$ 6.37	$ 6.38	$ 6.68	$ 6.68	$ -1.67	$ -5.43
Net daily cost-benefit per VMT reduced	$ 1.27	$ 1.26	$ 1.34	$ 1.32	$ -0.33	$ -1.07
Net daily cost-benefit per Ton of CO reduced	$ 29,813	$ 29,819	$ 31,218	$ 31,223	$ -7,829	$ -25,382
Net daily cost-benefit per Ton of ROG reduced	$ 368,939	$ 369,840	$ 386,328	$ 386,871	$ -96,888	$ -314,465
Net daily cost-benefit per Ton of NOx reduced	$ 737,877	$ 716,567	$ 772,656	$ 750,295	$ -193,776	$ -609,929
Net daily cost-benefit per Ton of PM reduced	err	err	err	err	err	err

TCM #19 (Long commute subscription services)

DESCRIPTION OF MEASURE:

- Provide matching and marketing for bus poolers commuting 15 or more miles each way

Assumptions:

- 10% of employees (461,281) are affected
- Former mode use is assumed to be similar to those found elsewhere in major urban areas
- This TCM affects commute trips only
- Likely outcome presented represent the net vehicle trips adjusted for former mode use and park-and-ride travel
- Low end range reflects standard effectiveness in Los Angeles County
- High end range reflects implementation of other measures in concert with this measure including: marketing, buspool subsidy and feeder services

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	2,184	4,368	1,310	2,621	3,494	6,988
Daily VMT reduction	43,764	87,529	26,259	52,517	70,023	140,046
Daily CO reduction (Tons/Day)	0.858	1.715	0.400	0.800	1.258	2.515
Daily NOx reduction (Tons/Day)	0.046	0.092	0.032	0.065	0.079	0.157
Daily ROG reduction (Tons/Day)	0.091	0.183	0.046	0.092	0.137	0.274
Daily PM reduction (Tons/Day)	0.001	0.002	0.001	0.001	0.002	0.003
Daily tire wear reduction (Tons/Day)	0.010	0.019	0.006	0.012	0.015	0.031

Costs and Benefits of TCM #19

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 12,095	$ 24,189	$ 13,722	$ 13,722	$ 6,700	$ 6,700	0	0
Daily cost per trip reduced	$ 3.46	$ 3.46	$ 3.93	$ 1.96	$ 1.92	$ 0.96	n/a	n/a
Daily cost per VMT reduced	$ 0.17	$ 0.17	$ 0.20	$ 0.1	$ 0.10	$ 0.05	n/a	n/a
Daily cost per Ton of CO reduced	$ 9,614	$ 9,618	$ 10,908	$ 5,456	$ 5,326	$ 2,664	n/a	n/a
Daily cost per Ton of ROG reduced	$ 88,282	$ 87,961	$ 100,163	$ 49,899	$ 48,904	$ 24,363	n/a	n/a
Daily cost per Ton of NOx reduced	$ 155,059	$ 154,072	$ 175,927	$ 87,403	$ 85,895	$ 42,674	n/a	n/a
Daily cost per ton of PM reduced	$ 6,047,308	$ 8,063,077	$ 6,861,143	$ 4,574,095	$ 3,349,902	$ 2,233,268	n/a	n/a
Total daily benefit	$ 10,574	$ 21,148	$ 19,351	$ 38,702	$ 25,108	$ 50,215	$ 3,154	$ 6,308
Daily benefit per trip reduced	$ 3.03	$ 3.03	$ 5.54	$ 5.54	$ 7.19	$ 7.19	n/a	n/a
Daily benefit per VMT reduced	$ 0.15	$ 0.15	$ 0.28	$ 0.28	$ 0.36	$ 0.36	n/a	n/a
Daily benefit per Ton of CO reduced	$ 8,405	$ 8,409	$ 15,383	$ 15,389	$ 19,959	$ 19,967	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 77,183	$ 76,902	$ 141,251	$ 140,737	$ 183,271	$ 182,604	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 135,565	$ 134,701	$ 248,095	$ 246,514	$ 321,899	$ 319,848	n/a	n/a
Daily benefit per Ton of PM reduced	$ 5,287,016	$ 7,049,354	$ 9,675,692	$ 12,900,923	$ 12,554,050	$ 16,738,734	n/a	n/a
Total daily cost-benefit-benefit	$ 1,521	$ 3,041	$ -5,629	$ -24,980	$ -18,408	$ -43,515	$ -3,154	$ -6,308
Daily cost-benefit per trip reduced	$ 0.44	$ 0.44	$ -1.61	$ -3.57	$ -5.27	$ -6.2	n/a	n/a
Daily cost-benefit per VMT reduced	$ 0.02	$ 0.02	$ -0.08	$ -0.18	$ -0.26	$ -0.3	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ 1,209	$ 1,209	$ -4,475	$ -9,933	$ -14,633	$ -17,303	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ 11,099	$ 11,059	$ -41,088	$ -90,838	$ -134,367	$ -158,241	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ 19,495	$ 19,370	$ -72,168	$ -159,111	$ -236,004	$ -277,174	n/a	n/a
Daily cost-benefit per Ton of PM reduced	$ 760,292	$ 1,013,723	$ -2,814,549	$ -8,326,828	$ -9,204,148	$ -14,505,465	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #19

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 56,084**	**$ 112,168**	**$ 58,188**	**$ 116,376**	**$ 32,517**	**$ 44,611**
Net daily cost per trip reduced	$ 16.05	$ 16.05	$ 16.65	$ 16.65	$ 9.31	$ 6.38
Net daily cost per VMT reduced	$ 0.80	$ 0.80	$ 0.83	$ 0.83	$ 0.46	$ 0.32
Net daily cost per Ton of CO reduced	$ 44,582	$ 44,599	$ 46,254	$ 46,273	$ 25,848	$ 17,738
Net daily cost per Ton of ROG reduced	$ 409,371	$ 407,883	$ 424,730	$ 423,185	$ 237,348	$ 162,223
Net daily cost per Ton of NOx reduced	$ 719,024	$ 714,444	$ 745,999	$ 741,248	$ 416,881	$ 284,149
Net daily cost per Ton of PM reduced	$ 28,041,931	$ 37,389,241	$ 29,093,972	$ 38,791,979	$ 16,258,353	$ 14,870,440
Total daily benefit	**$ 2,104**	**$ 4,208**	**0**	**0**	**$ 58,188**	**$ 117,376**
Net daily benefit per trip reduced	$ 0.60	$ 0.60	0	0	$ 16.65	$ 16.65
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 0.83	$ 0.83
Net daily benefit per Ton of CO reduced	$ 1,673	$ 1,673	0	0	$ 46,254	$ 46,273
Net daily benefit per Ton of ROG reduced	$ 15,358	$ 15,303	0	0	$ 424,730	$ 423,185
Net daily benefit per Ton of NOx reduced	$ 26,975	$ 26,804	0	0	$ 745,999	$ 741,248
Net daily benefit per Ton of PM reduced	$ 1,052,042	$ 1,402,738	0	0	$ 29,093,972	$ 38,791,979
Total daily cost-benefit	**$ 53,980**	**$ 107,960**	**$ 58,188**	**$ 116,376**	**$ -25,671**	**$ -71,763**
Net daily cost-benefit per trip reduced	$ 15.45	$ 15.45	$ 16.65	$ 16.65	$ -7.35	$ -10.27
Net daily cost-benefit per VMT reduced	$ 0.77	$ 0.77	$ 0.83	$ 0.83	$ -0.37	$ -0.51
Net daily cost-benefit per Ton of CO reduced	$ 42,909	$ 42,926	$ 46,254	$ 46,273	$ -20,406	$ -28,535
Net daily cost-benefit per Ton of ROG reduced	$ 394,013	$ 392,580	$ 424,730	$ 423,185	$ -187,381	$ -260,962
Net daily cost-benefit per Ton of NOx reduced	$ 692,048	$ 687,640	$ 745,999	$ 741,248	$ -329,118	$ -457,099
Net daily cost-benefit per Ton of PM reduced	$ 26,989,889	$ 35,986,503	$ 29,093,972	$ 38,791,979	$ -12,835,619	$ -23,921,538

TCM #20 (Park-and-ride lots)

DESCRIPTION OF MEASURE:

- Park-and-ride lots to accommodate carpoolers, vanpoolers, transit and rail riders.

Assumptions:

- Total existing park-and-ride spaces in Los Angeles County is 11,763
- Total proposed park-and-ride spaces in Los Angeles County is 18,975. An increase of 9.76% (3,000 Spaces) over the existing and proposed spaces is assumed
- 75-100% utilization rate is assumed. 46% of park-and-ride users drive their own vehicle, the rest use transit, carpool or walk.
- Likely outcomes presented represent range of net vehicle trip reductions adjusted for mode used to commute to park-and-ride lots.
- Low end range reflects a utilization rate of 75%
- High end range reflects a utilization rate of 100%

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	759	1,013	456	608	**1,215**	**1,620**
Daily VMT reduction	16,031	21,375	9,619	12,825	**25,650**	**34,200**
Daily CO reduction (Tons/Day)	0.307	0.409	0.143	0.191	**0.450**	**0.600**
Daily NOx reduction (Tons/Day)	0.017	0.022	0.012	0.016	**0.028**	**0.038**
Daily ROG reduction (Tons/Day)	0.033	0.044	0.017	0.022	**0.050**	**0.066**
Daily PM reduction (Tons/Day)	0.000	0.000	0.000	0.000	**0.001**	**0.001**
Daily tire wear reduction (Tons/Day)	0.004	0.005	0.002	0.003	**0.006**	**0.008**

Costs and Benefits of TCM #20

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 13,717	$ 18,456	$ 5,563	$ 7,500	$ 10,200	$ 10,185	0	0
Daily cost per trip reduced	$ 3.08	$ 3.08	$ 1.25	$ 1.25	$ 2.29	$ 1.70	n/a	n/a
Daily cost per VMT reduced	$ 0.27	$ 0.27	$ 0.11	$ 0.11	$ 0.20	$ 0.15	n/a	n/a
Daily cost per Ton of CO reduced	$ 30,482	$ 30,759	$ 12,361	$ 12,500	$ 22,667	$ 16,976	n/a	n/a
Daily cost per Ton of ROG reduced	$ 274,334	$ 279,630	$ 111,250	$ 113,636	$ 204,000	$ 154,324	n/a	n/a
Daily cost per Ton of NOx reduced	$ 472,989	$ 485,673	$ 191,810	$ 197,368	$ 351,724	$ 268,037	n/a	n/a
Daily cost per ton of PM reduced	err	err	err	err	err	err	n/a	n/a
Total daily benefit	$ 18,717	$ 25,237	$ 9,242	$ 12,462	$ 44,461	$ 59,909	$ 2,468	$ 2,468
Daily benefit per trip reduced	$ 4.21	$ 4.21	$ 2.08	$ 2.08	$ 9.99	$ 9.98	n/a	n/a
Daily benefit per VMT reduced	$ 0.37	$ 0.37	$ 0.18	$ 0.18	$ 0.88	$ 0.88	n/a	n/a
Daily benefit per Ton of CO reduced	$ 41,594	$ 42,061	$ 20,538	$ 20,769	$ 98,802	$ 99,848	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 374,345	$ 382,375	$ 184,846	$ 188,811	$ 889,215	$ 907,710	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 645,422	$ 664,124	$ 318,700	$ 327,935	$ 1,533,130	$ 1,576,549	n/a	n/a
Daily benefit per Ton of PM reduced	err	err	err	err	err	err	n/a	n/a
Total daily cost-benefit	$ -5,001	$ -6,781	$ -3,680	$ -4,962	$ -34,261	$ -49,723	$ -2,468	$ -2,468
Daily cost-benefit per trip reduced	$ -1.12	$ -1.13	$ -0.83	$ -0.83	$ -7.70	$ -8.29	n/a	n/a
Daily cost-benefit per VMT reduced	$ -0.10	$ -0.10	$ -0.07	$ -0.07	$ -0.68	$ -0.73	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ -11,112	$ -11,302	$ -8,177	$ -8,269	$ -76,135	$ -82,872	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ -100,011	$ -102,745	$ -73,596	$ -75,175	$ -685,215	$ -753,386	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ -172,433	$ -178,451	$ -126,890	$ -130,567	$ 1,181,405	$ -1,308,512	n/a	n/a
Daily cost-benefit per Ton of PM reduced	err	err	ERR	ERR	ERR	ERR	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #20

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 62,056**	**$ 83,633**	**$ 63,764**	**$ 85,935**	**$ 29,479**	**$ 36,141**
Net daily cost per trip reduced	$ 13.95	$ 13.94	$ 14.33	$ 14.32	$ 6.62	$ 6.02
Net daily cost per VMT reduced	$ 1.22	$ 1.22	$ 1.26	$ 1.26	$ 0.58	$ 0.53
Net daily cost per Ton of CO reduced	$ 137,903	$ 139,389	$ 141,697	$ 143,225	$ 65,509	$ 60,235
Net daily cost per Ton of ROG reduced	$ 1,241,125	$ 1,267,169	$ 1,275,271	$ 1,302,047	$ 589,584	$ 547,591
Net daily cost per Ton of NOx reduced	$ 2,139,871	$ 2,200,872	$ 2,198,743	$ 2,261,450	$ 1,016,524	$ 951,078
Net daily cost per Ton of PM reduced	err	err	err	err	err	err
Total daily benefit	**$ 1,707**	**$ 2,302**	**0**	**0**	**$ 74,889**	**$ 100,935**
Net daily benefit per trip reduced	$ 0.38	$ 0.38	0	0	$ 16,83	$ 16.82
Net daily benefit per VMT reduced	$ 0.03	$ 0,03	0	0	$ 1.48	$ 1.48
Net daily benefit per Ton of CO reduced	$ 3,794	$ 3,837	0	0	$ 166,419	$ 168,225
Net daily benefit per Ton of ROG reduced	$ 34,146	$ 34,878	0	0	$ 1,497,771	$ 1,529,320
Net daily benefit per Ton of NOx reduced	$ 58,872	$ 60,578	0	0	$ 2,582,364	$ 2,656,187
Net daily benefit per Ton of PM reduced	err	err	0	0	err	err
Total daily cost-benefit	**$ 60,349**	**$ 81,331**	**$ 63,764**	**$ 85,935**	**$ -45,409**	**$ -64,974**
Net daily cost-benefit per trip reduced	$ 13.56	$ 13.56	$ 14.33	$ 14.32	$ -10.20	$ -10.80
Net daily cost-benefit per VMT reduced	$ 1.19	$ 1.19	$ 1.26	$ 1.26	$ -0.90	$ -0.95
Net daily cost-benefit per Ton of CO reduced	$ 134,109	$ 135,552	$ 141,697	$ 143,225	$ -100,910	$ -107,990
Net daily cost-benefit per Ton of ROG reduced	$ 1,206,979	$ 1,232,290	$ 1,275,271	$ 1,302,047	$ -908,187	$ -981,729
Net daily cost-benefit per Ton of NOx reduced	$ 2,080,998	$ 2,140,293	$ 2,198,743	$ 2,261,450	$ -1,565,840	$ -1,705,108
Net daily cost-benefit per Ton of PM reduced	err	err	err	err	err	err

TCM #21 (Preferential parking for carpools and vanpools)

DESCRIPTION OF MEASURE:

- Provide preferential parking spaces for carpoolers and vanpoolers that is close to the building entrance

Assumptions:

- 5% of all parking spaces at major employment centers are reserved for carpoolers and vanpoolers. 75-100% utilization rate of preferential parking spaces is assumed. 30% of all parking spaces in Los Angeles County are affected
- Former mode use for carpoolers and vanpoolers is assumed to be similar to those found elsewhere in major urban areas
- Likely outcomes presented represent range of net vehicle trips reduced adjusted for former mode use and park-and-ride travel
- Low end range reflects the standard effectiveness of such a measure in Los Angeles County
- High end range reflects implementation of other measures in concert with this measure including: ridesharing program for small employers, parking pricing and rideshare subsidy

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	1,400	2,800	822	1,644	2,222	4,444
Daily VMT reduction	15,960	31,920	9,371	18,741	25,331	50,662
Daily CO reduction (Tons/Day)	0.422	0.844	0.192	0.385	0.614	1.228
Daily NOx reduction (Tons/Day)	0.020	0.039	0.013	0.026	0.032	0.065
Daily ROG reduction (Tons/Day)	0.040	0.079	0.020	0.039	0.059	0.11
Daily PM reduction (Tons/Day)	0.000	0.001	0.000	0.000	0.001	0.001
Daily tire wear reduction (Tons/Day)	0.004	0.007	0.002	0.004	0.006	0.011

Costs and Benefits of TCM #21

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 3,072	$ 6,144	$ 17	$ 34	$ 444	$ 889	0	0
Daily cost per trip reduced	$ 1.38	$ 1.38	$ 0.01	$ 0,01	$ 0.20	$ 0.20	n/a	n/a
Daily cost per VMT reduced	$ 0.12	$ 0.12	$ 0.00	$ 0,00	$ 0.02	$ 0,02	n/a	n/a
Daily cost per Ton of CO reduced	$ 5,004	$ 5,000	$ 28	$ 28	$ 724	$ 723	n/a	n/a
Daily cost per Ton of ROG reduced	$ 51,204	$ 52,071	$ 285	$ 290	$ 7,407	$ 7,532	n/a	n/a
Daily cost per Ton of NOx reduced	$ 93,097	$ 94,530	$ 518	$ 526	$ 13,467	$ 13,674	n/a	n/a
Daily cost per ton of PM reduced	err	$ 6,144,427	err	$ 34,185	err	$ 888,800	n/a	n/a
Total daily benefit	$ 1,843	$ 3,687	$ 4,615	$ 9,230	$ 10,956	$ 21,912	$ 1,147	$ 1,915
Daily benefit per trip reduced	$ 0.83	$ 0.83	$ 2.08	$ 2.08	$ 4.93	$ 4.93	n/a	n/a
Daily benefit per VMT reduced	$ 0.07	$ 0.07	$ 0.18	$ 0.18	$ 0.43	$ 0.43	n/a	n/a
Daily benefit per Ton of CO reduced	$ 3,002	$ 3,000	$ 7,516	$ 7,510	$ 17,843	$ 17,829	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 30,722	$ 31,243	$ 76,915	$ 78,219	$ 182,597	$ 186,692	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 55,858	$ 56,718	$ 139,846	$ 141,998	$ 331,995	$ 337,103	n/a	n/a
Daily benefit per Ton of PM reduced	err	$ 3,686,656	err	$ 9,229,846	err	$ 21,911,688	n/a	n/a
Total daily cost-benefit	$ 1,229	$ 2,458	$ -4,598	$ -9,196	$ -10,511	$ -21,023	$ -1,147	$ -1,915
Daily cost-benefit per trip reduced	$ 0.55	$ 0.55	$ -2.07	$ -2.07	$ -4.73	$ -4.73	n/a	n/a
Daily cost-benefit per VMT reduced	$ 0.05	$ 0.05	$ -0.18	$ -0.18	$ -0.41	$ -0.41	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ 2001	$ 2,000	$ -7,488	$ -7,482	$ -17,120	$ -17,106	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ 20,481	$ 20,829	$ -76,631	$ -77,929	$ -175,191	$ -178,160	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ 37,239	$ 37,812	$ -139,328	$ -141,472	$ -318,529	$ -323,429	n/a	n/a
Daily cost-benefit per Ton of PM reduced	err	2,457,771	err	$ -9,195,662	err	$ 21,022,888	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #21

Costs and Benefits	Scenario #1 (The Build Scenario) Short-Term		Scenario #1 (The Build Scenario) Long-Term		Scenario #2 (No Build)	
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 17,794**	**$ 35,588**	**$ 18,561**	**$ 37,123**	**$ 3,534**	**$ 7,067**
Net daily cost per trip reduced	$ 8.01	$ 8.01	$ 8.35	$ 8.35	$ 1.59	$ 1.59
Net daily cost per VMT reduced	$ 0.70	$ 0.70	$ 0.73	$ 0.73	$ 0.14	$ 0.14
Net daily cost per Ton of CO reduced	$ 28,981	$ 28,957	$ 30,230	$ 30,206	$ 5,755	$ 5,751
Net daily cost per Ton of ROG reduced	$ 296,568	$ 301,594	$ 309,356	$ 314,600	$ 58,895	$ 59,893
Net daily cost per Ton of NOx reduced	$ 539,214	$ 547,510	$ 562,466	$ 571,120	$ 107,082	$ 108,729
Net daily cost per Ton of PM reduced	err	$ 35,588,120	err	$ 37,122,768	err	$ 706,412
Total daily benefit	**$ 767**	**$ 1,535**	**0**	**0**	**18,561**	**$ 37,123**
Net daily benefit per trip reduced	$ 0.35	$ 0.35	0	0	$ 8.35	$ 8.35
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 0.73	$ 0.73
Net daily benefit per Ton of CO reduced	$ 1,250	$ 1,249	0	0	$ 30,230	$ 30,206
Net daily benefit per Ton of ROG reduced	$ 12,789	$ 13,005	0	0	$ 309,356	$ 314,560
Net daily benefit per Ton of NOx reduced	$ 23,252	$ 23,610	0	0	$ 562,466	$ 571,120
Net daily benefit per Ton of PM reduced	err	$ 1,534,648	0	0	err	$ 37,122,768
Total daily cost-benefit	**$ 17,027**	**$ 34,053**	**$ 18,561**	**$ 37,123**	**$ -15,028**	**$ -30,055**
Net daily cost-benefit per trip reduced	$ 7.66	$ 7.66	$ 8.35	$ 8.35	$ -6.76	$ -6.76
Net daily cost-benefit per VMT reduced	$ 0.67	$ 0.67	$ 0.73	$ 0.73	$ -0.59	$ -0.59
Net daily cost-benefit per Ton of CO reduced	$ 27,731	$ 27,708	$ 30,230	$ 30,206	$ -24,475	$ -24,455
Net daily cost-benefit per Ton of ROG reduced	$ 283,779	$ 288,589	$ 309,356	$ 314,600	$ -250,461	$ -254,706
Net daily cost-benefit per Ton of NOx reduced	$ 515,962	$ 523,900	$ 562,466	$ 571,120	$ -455,384	$ -462,390
Net daily cost-benefit per Ton of PM reduced	err	$ 34,053,472	err	$ 37,122,768	err	$ -30,055,357

TCM #22 (Parking discount for carpools and vanpools)

DESCRIPTION OF MEASURE:

- Provide free and preferential parking for vanpoolers and carpoolers

Assumptions:

- 5% of all parking spaces at major employment centers are reserved for carpoolers and vanpoolers. 75-100% utilization rate of preferential parking spaces is assumed.
- 30% of all parking spaces in Los Angeles County are affected
- Former mode use for carpoolers and vanpoolers is assumed to be similar to those found elsewhere in major urban areas
- Likely outcomes presented represent range of net vehicle trips reduced adjusted for former mode use and park-and-ride travel
- Low end range reflects the standard effectiveness of such a measure in Los Angeles County
- High end range reflects implementation of other measures in concert with this measure including: ridesharing program for small employers, parking pricing and rideshare subsidy

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	3,678	4,905	2,207	2,943	5,885	7,847
Daily VMT reduction	47,819	63,759	28,691	38,255	76,510	102,014
Daily CO reduction (Tons/Day)	1.170	1.561	0.546	0.728	1.716	2.288
Daily NOx reduction (Tons/Day)	0.056	0.075	0.038	0.051	0.095	0.126
Daily ROG reduction (Tons/Day)	0.113	0.151	0.057	0.076	0.170	0.227
Daily PM reduction (Tons/Day)	0.001	0.001	0.001	0.001	0.002	0.002
Daily tire wear reduction (Tons/Day)	0011	0.014	0.006	0.008	0.017	0.022

Costs and Benefits of TCM #22

Costs and Benefits	Individual		Private Sector		Public Sector		Societal	
	Standard	High	Standard	High	Standard	High	Standard	High
Total daily cost	$ 7,731	$ 10,307	$ 1,403	$ 1,871	$ 1,177	$ 1,569	0	0
Daily cost per trip reduced	$ 1.31	$ 1.31	$ 0.24	$ 0.24	$ 0.20	$ 0.20	n/a	n/a
Daily cost per VMT reduced	$ 0.10	$ 0.10	$ 0.02	$ 0.02	$ 0.02	$ 0.02	n/a	n/a
Daily cost per Ton of CO reduced	$ 4,505	$ 4,503	$ 818	$ 817	$ 686	$ 686	n/a	n/a
Daily cost per Ton of ROG reduced	$ 45,474	$ 45,407	$ 8,255	$ 8,243	$ 6,924	$ 6,914	n/a	n/a
Daily cost per Ton of NOx reduced	$ 82,240	$ 81,805	$ 14,929	$ 14,851	$ 12,521	$ 12,456	n/a	n/a
Daily cost per ton of PM reduced	$ 3,865,285	$ 5,153,697	$ 701,673	$ 935,604	$ 588,500	$ 784,700	n/a	n/a
Total daily benefit	$ 5,996	$ 7.995	12,223	$ 16,298	$ 29,017	$ 38,691	$ 3,447	$ 4,596
Daily benefit per trip reduced	$ 1.02	$ 1.02	$ 2.08	$ 2.08	$ 4.93	$ 4.93	n/a	n/a
Daily benefit per VMT reduced	$ 0.08	$ 0.08	$ 0.16	$ 0.16	$ 0.38	$ 0.38	n/a	n/a
Daily benefit per Ton of CO reduced	$ 3,494	$ 3,493	$ 7,123	$ 7,120	$ 16,910	$ 16,903	n/a	n/a
Daily benefit per Ton of ROG reduced	$ 35,273	$ 35,222	$ 71,898	$ 71,796	$ 170,687	$ 170,443	n/a	n/a
Daily benefit per Ton of NOx reduced	$ 63,972	$ 63,455	$ 130,029	$ 129,346	$ 308,688	$ 307,068	n/a	n/a
Daily benefit per Ton of PM reduced	$ 2,998,210	$ 3,997,641	$ 6,111,346	$ 8,148,808	$ 14,508,358	$ 19,345,299	n/a	n/a
Total daily cost-benefit	$ 1,734	$ 2,312	$ -10,819	$ -14,426	$ -27,840	$ -37,121	$ 3,447	$ -4,596
Daily cost-benefit per trip reduced	$ 0.29	$ 0.29	$ -1.84	$ -1.84	$ -4.73	$ -4.73	n/a	n/a
Daily cost-benefit per VMT reduced	$ 0.02	$ 0.02	$ -0.14	$ -0.14	$ -0.36	$ -0.36	n/a	n/a
Daily cost-benefit per Ton of CO reduced	$ 1,011	$ 1,010	$ -6,305	$ -6,302	$ -16,224	$ -16,217	n/a	n/a
Daily cost-benefit per Ton of ROG reduced	$ 10,201	$ 10,186	$ -63,643	$ -63,552	$ -163,763	$ -163,530	n/a	n/a
Daily cost-benefit per Ton of NOx reduced	$ 18,448	$ 18,350	$ -115,099	$ -114,495	$ -296,167	$ -294,613	n/a	n/a
Daily cost-benefit per Ton of PM reduced	$ 867,076	$ 1,156,056	$ -5,409,673	$ -7,213,204	$ -13,919,858	$ -18,560,599	n/a	n/a

Short-Term and Long-Term Total Costs and Benefits of TCM #22

Costs and Benefits	Scenario #1 (The Build Scenario)				Scenario #2 (No Build)	
	Short-Term		Long-Term			
	Standard	High	Standard	High	Standard	High
Total daily cost	**$ 48,383**	**$ 64,514**	**$ 50,682**	**$ 67,759**	**$ 10,311**	**$ 13,748**
Net daily cost per trip reduced	$ 8.22	$ 8.22	$ 8.61	$ 8.61	$ 1.75	$ 1.75
Net daily cost per VMT reduced	$ 0.63	$ 0.63	$ 0.66	$ 0.66	$ 0.13	$ 0.13
Net daily cost per Ton of CO reduced	$ 28,195	$ 28,184	$ 29,535	$ 29,523	$ 6,009	$ 6,006
Net daily cost per Ton of ROG reduced	$ 284,609	$ 284,201	$ 298,132	$ 297,705	$ 60,652	$ 60,564
Net daily cost per Ton of NOx reduced	$ 514,718	$ 512,013	$ 539,175	$ 536,342	$ 109,691	$ 109,111
Net daily cost per Ton of PM reduced	$ 24,191,739	$ 32,256,845	$ 25,341,234	$ 33,789,522	$ 5,155,458	$ 6,874,001
Total daily benefit	**$ 2,299**	**$ 3,065**	**0**	**0**	**$ 50,682**	**$ 67,579**
Net daily benefit per trip reduced	$ 0.39	$ 0.39	0	0	$ 8.61	$ 8.61
Net daily benefit per VMT reduced	$ 0.03	$ 0.03	0	0	$ 0.66	$ 0.66
Net daily benefit per Ton of CO reduced	$ 1,340	$ 1,339	0	0	$ 29,535	$ 29,523
Net daily benefit per Ton of ROG reduced	$ 13,523	$ 13,504	0	0	$ 298,132	$ 297,705
Net daily benefit per Ton of NOx reduced	$ 24,457	$ 24,328	0	0	$ 539,175	$ 536,642
Net daily benefit per Ton of PM reduced	$ 1,149,496	$ 1,532,677	0	0	$ 25,341,234	$ 33,789,522
Total daily cost-benefit	**$ 46,084**	**$ 61,448**	**$ 50,682**	**$ 67,759**	**$ -40,372**	**$ -53,831**
Net daily cost-benefit per trip reduced	$ 7.83	$ 7.83	$ 8.61	$ 8.61	$ -6.86	$ -6.86
Net daily cost-benefit per VMT reduced	$ 0.60	$ 0.60	$ 0.66	$ 0.66	$ -0.53	$ -0.53
Net daily cost-benefit per Ton of CO reduced	$ 26,856	$ 26,845	$ 29,535	$ 29,523	$ -23,527	$ -23,517
Net daily cost-benefit per Ton of ROG reduced	$ 271,085	$ 270,698	$ 298,132	$ 297,705	$ -237,480	$ -237,141
Net daily cost-benefit per Ton of NOx reduced	$ 490,260	$ 487,685	$ 539,175	$ 536,342	$ -428,485	$ -427,230
Net daily cost-benefit per Ton of PM reduced	$ 23,042,243	$ 30,724,168	$ 25,341,234	$ 33,789,522	$ -20,185,776	$ -26,915,521

TCM #23.1 (Parking Management Scenario 1)

DESCRIPTION OF MEASURE:

- Parking pricing strategies implemented to discourage automobile use as commute travel mode.

Assumptions:

- Daily increase in parking charge of $0.50
- Transit service headways increased 10%
- 100% of all employees (4.6 Million) are affected. This TCM measure affects commute trips only (6,655,681/day)
- Likely outcomes presented represent range of net vehicle trips reduced adjusted for current transit and ridesharers, pick up and drop off related trips to transit or rideshare meeting points.
- Low end range reflects lack of ample alternative options and average availability of incentives to shift modes.
- High end reflects strong countervailing incentives offered to promote mode-shift.

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	10,803	16,205	6,482	9,723	17,285	25,927
Daily VMT reduction	143,475	215,212	86,085	129,127	229,559	344,339
Daily CO reduction (Tons/Day)	30470	5.204	1.618	2.427	5.087	7.631
Daily NOx reduction (Tons/Day)	0.168	0.251	0.115	0.172	0.282	0.423
Daily ROG reduction (Tons/Day)	0.337	0.506	0.170	0.255	0.507	0.761
Daily PM reduction (Tons/Day)	0.003	0.005	0.002	0.003	0.005	0.008
Daily tire wear reduction (Tons/Day)	0.032	0.047	0.019	0.028	0.051	0.076

TCM #23.2 (Parking management scenario 2)

DESCRIPTION OF MEASURE:

- Parking pricing strategies implemented to discourage automobile use as commute travel mode.

Assumptions:

- Daily increase in parking charge of $1.00
- Transit service headways increased 10%
- 100% of all employees (4.6 Million) are affected. This TCM measure effects commute trips only (6,655,681/day)
- Likely outcomes presented represent range of net vehicle trips reduced adjusted for current transit and ridesharers, pick up and drop off related trips to transit or rideshare meeting points.
- low end range reflects lack of ample alternative options and average availability of incentives to shift modes.
- high end reflects strong countervailing incentives offered to promote mode-shift.

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	32,409	43,212	19,445	25,927	51,854	69,139
Daily VMT reduction	430,424	573,898	258,254	344,339	688,678	918,237
Daily CO reduction (Tons/Day)	10.409	13.878	4.853	60471	150262	20.349
Daily NOx reduction (Tons/Day)	0.503	0.670	0.344	0.459	0.847	1.129
Daily ROG reduction (Tons/Day)	1.011	1.348	0.510	0.680	1.521	2.029
Daily PM reduction (Tons/Day)	0.009	0.013	0.006	0.008	0.015	0.020
Daily tire wear reduction (Tons/Day)	0.095	0.127	0.057	0.076	0.152	0.202

10409
4853
15262

TCM #23.3 (Parking management scenario 3)

DESCRIPTION OF MEASURE:

- Parking pricing strategies implemented to discourage automobile use as commute travel mode.

Assumptions:

- Daily increase in parking charge of $3.00
- Transit service headways increased 10%
- 100% of all employees (4.6 Million) are affected. This TCM measure effects commute trips only (6,655,681/day)
- Likely outcomes presented represent range of net vehicle trips reduced adjusted for current transit and ridesharers, pick up and drop off related trips to transit or rideshare meeting points.
- Low end range reflects lack of ample alternative options and average availability of incentives to shift modes.
- High end reflects strong countervailing incentives offered to promote mode-shift.

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	129,636	181,490	77,782	108,894	207,418	290,385
Daily VMT reduction	1,721,696	2,410,374	1,033,018	1,446,225	2,754,714	3,856,599
Daily CO reduction (Tons/Day)	41.634	58.288	19.413	27.178	61.047	85.465
Daily NOx reduction (Tons/Day)	2.011	2.815	1.377	1.928	3.388	4.743
Daily ROG reduction (Tons/Day)	4.044	5.662	2.041	2.858	6.086	8.520
Daily PM reduction (Tons/Day)	0.038	0.053	0.023	0.032	0.061	0.085
Daily tire wear reduction (Tons/Day)	0.380	0.531	0.228	0.319	0.607	0.850

TCM #24 (No drive days)

DESCRIPTION OF MEASURE:

- 100% of employment are not permitted to drive once a week - no drive day

Assumptions:

- 100% of commuters do not drive to work one day every week
- 20% reduction of daily commute trips is assumed to result
- 32.4% Of all trips in los angeles county are commute trips and are affected by this measure
- 30% of all commute trips reduced will be lost due to an increase in the non-commute travel
- Outcomes presented represents net commute vehicle trips reduced adjusted for drive alone mode share

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	432,120	432,120	259,272	259,272	**691,392**	**691,392**
Daily VMT reduction	5,665,094	5,665,094	3,399,057	3,399,057	**9,064,151**	**9,064,151**
Daily CO reduction (Tons/Day)	137.998	137.998	64.343	64.343	**202.341**	**202.341**
Daily NOx reduction (Tons/Day)	6.642	6.642	4.544	4.544	**11.186**	**11.186**
Daily ROG reduction (Tons/Day)	13.364	13.364	6.747	6.747	**20.112**	**20.112**
Daily PM reduction (Tons/Day)	0.125	0.125	0.075	0.075	**0.200**	**0.200**
Daily tire wear reduction (Tons/Day)	1.249	1.249	0.749	0.749	**1.998**	**1.998**

TCM #25 (Gas tax)

DESCRIPTION OF MEASURE:

- $0.50 Gas tax per gallon

Assumptions:

- 100% (4.6 Million) of employees in Los Angeles County would be affected
- This TCM will affect commuters mode of travel. SOV users would shift to rideshare and transit modes. The former mode of new ridesharers and transit riders are assumed to be similar to those found elsewhere in major urban areas.
- Likely outcomes presented represent range of net vehicle trip reduction adjusted for former mode used by ridesharers and transit users and park-and-ride travel.
- Low end range reflects standard effectiveness of such a measure in Los Angeles County.
- High end range reflects implementation of other measures in concert with this measure including: ridesharing program, transit improvements, ridesharing subsidy and transit pass subsidy.

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	211,935	264,919	317,903	397,378	**529,838**	**662,297**
Daily VMT reduction	1,866,724	2,333,404	2,285,083	2,856,354	**4,151,807**	**5,189,758**
Daily CO reduction (Tons/Day)	58.034	75.542	63.350	79.187	**121.383**	**151.729**
Daily NOx reduction (Tons/Day)	2.494	3.117	3.642	4.552	**6.135**	**7.669**
Daily ROG reduction (Tons/Day)	5.117	6.397	5.845	7.306	**10.962**	**13.703**
Daily PM reduction (Tons/Day)	0.041	0.051	0.050	0.063	**0.092**	**0.114**
Daily tire wear reduction (Tons/Day)	0.412	0.514	0.504	0.630	**0.915**	**1.144**

TCM #26(Tax per mile)

DESCRIPTION OF MEASURE:

- One cent per mile tax increase

Assumptions:

- 100% (4.6 Million) of employees in Los Angeles County would be affected by this measure. 11% and 60% increase in the out-of-pocket cost per commute and non-commute trip respectively result from this measure
- The proportionate shares of former modes of new ridesharers and transit users are assumed to be similar to those found elsewhere in major urban areas
- Likely outcome presented represent range of net vehicle trips reduced adjusted for former ridesharers and transit riders mode of travel and park-and-ride travel.
- Low end range reflects standard effectiveness of such a measure in Los Angeles County
- High end range reflects implementation of other measures in concert with this measure including: transit service improvement, transit subsidy and trip reduction ordinance for small employers.

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	87,822	131,732	131,732	197,598	219,554	329,330
Daily VMT reduction	773,532	1,160,298	709,774	1,064,660	1,483,306	2,224,959
Daily CO reduction (Tons/Day)	24.048	36.072	24.293	36.439	48.341	72.511
Daily NOx reduction (Tons/Day)	1.033	1.550	1.266	1.899	2.299	3.449
Daily ROG reduction (Tons/Day)	2.121	3.181	2.116	3.174	4.237	6.355
Daily PM reduction (Tons/Day)	0.017	0.026	0.016	0.023	0.033	0.049
Daily tire wear reduction (Tons/Day)	0.171	0.256	0.156	0.235	0.327	0.491

TCM #27 (Peak-hour and off-peak pricing)

DESCRIPTION OF MEASURE:

- $5 charge for peak commute and $1 charge for off-peak commute

Assumptions:

- 100% of commuters in los angeles county (4,612,814 employees)
- 25% increase in out-of-pocket cost for commute and non-commute trip. Commuters would be expected to shift to non-SOV mode
- Former mode use of ridesharers and transit users is assumed to be similar to those found elsewhere in major urban areas. Likely outcomes presented represent range of net vehicle trips reduced adjusted for former mode use and park-and-ride travel
- Low end range reflects the standard effectiveness of such a measure in Los Angeles County
- High end range reflects implementation of other measures in concert with this measure including: rideshare program, trip reduction ordinance for small employers and rideshare subsidy.

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	109,571	146,094	143,903	191,871	253,474	337,965
Daily VMT reduction	1,169,759	1,559,679	1,146,987	1,529,317	2,316,746	3,088,995
Daily CO reduction (Tons/Day)	32.169	42.892	29.606	39.474	61.775	82.367
Daily NOx reduction (Tons/Day)	1.461	1.948	1.764	2.352	3.225	4.299
Daily ROG reduction (Tons/Day)	2.968	3.958	2.791	3.721	5.759	7.769
Daily PM reduction (Tons/Day)	0.026	0.034	0.025	0.034	0.051	0.068
Daily tire wear reduction (Tons/Day)	0.258	0.344	0.253	0.337	0.511	0.681

TCM Package #1 (Transit, feeder services, and childcare)

DESCRIPTION OF PACKAGE:

- Improvement to the transit systems in terms of reduced headways in concert with childcare facilities at major transit stations, feeder services to and from these stations

Assumptions:

- 10% of all Los Angeles County based employees (461,281) are affected
- Commuters respond to the package of measures at same participation rate as those affected by similar measures from which data is drawn
- Likely outcomes presented represent ranges of net vehicle trip reductions adjusted for former mode use and park-and-ride travel
- Low end range reflects standard effectiveness in Los Angeles County
- High end range reflects higher shift to transit SOV user

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	9,232	10,001	5,539	6,001	14,771	16,002
Daily VMT reduction	86,973	94,220	86,148	93,327	173,120	187,547
Daily CO reduction (Tons/Day)	2.588	2.803	1.486	1.610	4.074	4.414
Daily NOx reduction (Tons/Day)	0.113	0.123	0.111	0.120	0.224	0.243
Daily ROG reduction (Tons/Day)	0.232	0.251	0.162	0.175	0.393	0.426
Daily PM reduction (Tons/Day)	0.002	0.002	0.002	0.002	0.004	0.004
Daily tire wear reduction (Tons/Day)	0.019	0.021	0.019	0.021	0.038	0.041

TCM Package #2 (Ridesharing, preferential parking, loading area, & GRH)

DESCRIPTION OF PACKAGE:

- Ridesharing (carpooling and vanpooling) for small employers in concert with preferential parking for carpoolers and vanpoolers, and passenger loading area to improve accessibility

Assumptions:

- 20% of Los Angeles County employees (922,562 employees) are effected
- This TCM affects commute trips only
- Former mode use for carpoolers and vanpoolers is assumed to be similar to those found elsewhere in major urban areas
- Likely outcomes presented represent a net vehicle trip reductions adjusted for former mode use and the travel to park-and-ride lots or to other meeting points for carpoolers and vanpoolers
- Low end range reflects standard effectiveness
- High end range reflects a higher shift to non-drive alone mode

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	14,951	18,689	8,971	11,214	23,922	29,903
Daily VMT reduction	205,358	256,698	338,981	423,726	544,339	680,424
Daily CO reduction (Tons/Day)	4.874	6.092	4.054	5.067	8.928	11.159
Daily Nox reduction (Tons/Day)	0.238	0.297	0.384	0.480	0.622	0.777
Daily ROG reduction (Tons/Day)	0.477	0.596	0.519	0.649	0.996	1.245
Daily PM reduction (Tons/Day)	0.005	0.006	0.007	0.009	0.012	0.015
Daily tire wear reduction (Tons/Day)	0.045	0.057	0.075	0.093	0.120	0.150

TCM Package #3 (Bicycle & pedestrian focus)

DESCRIPTION OF PACKAGE:

- Bicycle and pedestrian improvements in concert with bicycle racks and lockers at park-and-ride lots and at major transit stations and aggressive marketing for bicycling and walking

Assumptions:

- 8.8% Of all Los Angeles County employees (405,927) are affected
- The former mode of new users is assumed to be similar to those found elsewhere in major urban areas
- Likely outcomes presented represent range of net vehicle trips adjusted for former mode use
- Low end range reflects standard effectiveness in Los Angeles County
- High end range reflects higher participation in walking and bicycling mode

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	6,790	13,581	4,074	8,149	10,865	21,729
Daily VMT reduction	20,371	40,743	12,223	24,446	32,594	65,188
Daily CO reduction (Tons/Day)	1.442	2.884	0.671	1.342	2.113	4.226
Daily NOx reduction (Tons/Day)	0.047	0.094	0.029	0.058	0.076	0.152
Daily ROG reduction (Tons/Day)	0.102	0.204	0.053	0.106	0.155	0.309
Daily PM reduction (Tons/Day)	0.000	0.001	0.000	0.001	0.001	0.001
Daily tire wear reduction (Tons/Day)	0.004	0.009	0.003	0.005	0.007	0.014

TCM Package #4 (TRO, preferential parking, feeders, TMA/TMO)

DESCRIPTION OF PACKAGE:

- Trip reduction ordinance for small employers in concert with preferential parking for carpoolers and vanpoolers, feeder services to and from major rail and transit stations, and a transportation management associations and organizations

Assumptions:

- 20% of all Los Angeles County employees (922,562 employees) are affected
- Former mode use is assumed to be similar to those found elsewhere in major urban areas
- Likely outcomes presented present range of net vehicle trips adjusted for former mode use and travel to and from meeting points and park-and-ride lots
- Low end range reflects standard effectiveness in Los Angeles County
- High and range reflects higher participation rate in ridesharing and transit modes

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	37,654	50,205	22,592	30,123	**60,246**	**80,328**
Daily VMT reduction	486,383	648,511	281,707	375,609	**768,090**	**1,024,120**
Daily CO reduction (Tons/Day)	11.948	15.931	5.487	7.316	**17.435**	**23.147**
Daily NOx reduction (Tons/Day)	0.573	0.764	0.381	0.508	**0.954**	**1.272**
Daily ROG reduction (Tons/Day)	1.153	1.537	0.569	0.759	**1.722**	**2.296**
Daily PM reduction (Tons/Day)	0.011	0.014	0.006	0.008	**0.017**	**0.023**
Daily tire wear reduction (Tons/Day)	0.107	0.143	0.062	0.083	**0.169**	**0.226**

TCM Package #5.1 (Transit increase, subsidy, parking management)

Scenario 1

DESCRIPTION OF PACKAGE:

- 10% increase in transit route miles served
- Parking price increase of $0.50 Per day
- Transit subsidy equal to 50% of monthly pass cost

Assumptions:

- 10% of all Los Angeles County based employees affected (461,281 employees).
- Commuters respond to the package of measures at same participation rate as those affected by similar measures from which data is drawn
- Likely outcomes presented includes range of net vehicle trips reduced
- Low end range reflects standard effectiveness
- High end range reflects higher shift to transit mode

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	39,469	59,203	24,727	37,091	64,196	96,294
Daily VMT reduction	532,886	799,329	336,713	505,070	869,599	1,304,399
Daily CO reduction (Tons/Day)	12.768	19.152	6.240	9.360	19.008	28.512
Daily NOx reduction (Tons/Day)	0.620	0.929	0.446	0.669	1.066	1.599
Daily ROG reduction (Tons/Day)	1.245	1.868	0.660	0.989	1.905	2.857
Daily PM reduction (Tons/Day)	0.012	0.018	0.007	0.011	0.019	0.029
Daily tire wear reduction (Tons/Day)	0.117	0.176	0.074	0.111	0.192	0.288

TCM Package #5.2 (Transit increase, subsidy, parking management)

Scenario 2

DESCRIPTION OF PACKAGE:

- 10% increase in transit route miles served
- Parking price increase of $1.00 Per day
- Transit subsidy equal to 50% of monthly pass cost

Assumptions:

- 10% of all Los Angeles County based employees affected (461,281 employees).
- Commuters respond to the package of measures at same participation rate as those affected by similar measures from which data is drawn
- Likely outcomes presented includes range of net vehicle trips reduced
- Low end range reflects standard effectiveness
- High end range reflects higher shift to transit mode

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	57,931	86,896	35,978	53,966	93,908	140,862
Daily VMT reduction	779,523	1,169,285	487,526	731,289	1,267,049	1,900,574
Daily CO reduction (Tons/Day)	18.712	18.069	9.059	13.589	27.772	41.658
Daily NOx reduction (Tons/Day)	0.907	1.361	0.647	0.970	1.554	2.331
Daily ROG reduction (Tons/Day)	1.823	2.735	0.957	1.435	2.780	4.170
Daily PM reduction (Tons/Day)	0.017	0.026	0.011	0.016	0.028	0.042
Daily tire wear reduction (Tons/Day)	0.172	0.258	0.107	0.161	0.279	0.419

TCM Package #5.3 (Transit increase, subsidy, parking management)

Scenario 3

DESCRIPTION OF PACKAGE:

- 10% increase in transit route miles served
- Parking price increase of $3.00 Per day
- Transit subsidy equal to 50% of monthly pass cost

Assumptions:

- 10% of all Los Angeles County based employees affected (461,281 employees).
- Commuters respond to the package of measures at same participation rate as those affected by similar measures from which data is drawn
- Likely outcomes presented includes range of net vehicle trips reduced
- Low end range reflects standard effectiveness
- High end range reflects higher shift to transit mode

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	89,233	133,850	55,631	83,446	144,864	217,296
Daily VMT reduction	1,123,109	1,684,663	707,827	1,061,741	1,830,936	2,746,404
Daily CO reduction (Tons/Day)	28.002	42.003	13.628	20.442	41.630	62.446
Daily NOx reduction (Tons/Day)	1.332	1.999	0.953	1.429	2.285	3.428
Daily ROG reduction (Tons/Day)	2.686	4.029	1.420	2.130	4.106	6.159
Daily PM reduction (Tons/Day)	0.025	0.037	0.016	0.023	0.040	0.061
Daily tire wear reduction (Tons/Day)	0.248	0.371	0.156	0.234	0.404	0.605

TCM Package #6.1 (Ridesharing, preferential parking, SOV charge)

Scenario 1

DESCRIPTION OF PACKAGE:

- Ridesharing for small employers (25-99 employees) in concert with rideshare subsidy of $1/trip/day, parking charge of $0.50/Day/space and preferential free parking for carpoolers and vanpoolers.

Assumptions:

- For vanpool program commuters affected would be those living within 11 miles or more or more from work who are likely to vanpool. Those commuters are 18.2% of overall commuters in the county.
- The former modes of new riders are assumed to be similar to those found elsewhere in major urban areas.
- 40% of vanpooling participant drive their cars to park-n-ride.
- Likely outcomes presented include range of net vehicle trips adjusted for former vanpool and carpool riders and for park-and-ride travel.
- Low end range reflects standard effectiveness of such a measure in Los Angeles County.
- High end range reflects higher participation rate than experienced to date.

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	34,569	35,650	20,741	21,390	**55,310**	**57,040**
Daily VMT reduction	467,246	612,347	280,642	367,763	**747,889**	**980,110**
Daily CO reduction (Tons/Day)	11.188	12.919	5.219	6.029	**16.408**	**18.948**
Daily NOx reduction (Tons/Day)	0.543	0.669	0.372	0.464	**0.916**	**1.134**
Daily ROG reduction (Tons/Day)	1.091	1.331	0.551	0.669	**1.642**	**2.000**
Daily PM reduction (Tons/Day)	0.010	0.013	0.006	0.008	**0.016**	**0.022**
Daily tire wear reduction (Tons/Day)	0.103	0.135	0.062	0.081	**0.165**	**0.216**

TCM Package #6.2 (Ridesharing, preferential parking, SOV charge)

Scenario 2

DESCRIPTION OF PACKAGE:

- Ridesharing for small employers (25-99 employees) in concert with rideshare subsidy of $1/trip/day, parking charge of $1.00/Day/space and preferential free parking for carpoolers and vanpoolers.

Assumptions:

- For vanpool program commuters affected would be those living within 11 miles or more or more from work who are likely to vanpool. Those commuters are 18.2% of overall commuters in the county.
- The former modes of new riders are assumed to be similar to those found elsewhere in major urban areas.
- 40% of vanpooling participant drive their cars to park-n-ride.
- Likely outcomes presented include range of net vehicle trips adjusted for former vanpool and carpool riders and for park-and-ride travel.
- Low end range reflects standard effectiveness of such a measure in Los Angeles County.
- High end range reflects higher participation rate than experienced to date.

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	64,817	81,102	38,890	49,261	103,707	131,363
Daily VMT reduction	870,601	1,101,786	522,714	661,485	1,393,316	1,763,271
Daily CO reduction (Tons/Day)	20.920	26.489	9.757	12.354	30.678	38.843
Daily NOx reduction (Tons/Day)	0.014	1.283	0.695	0.879	1.708	2.163
Daily ROG reduction (Tons/Day)	2.037	2.579	1.029	1.302	3.066	3.881
Daily PM reduction (Tons/Day)	0.019	0.024	0.012	0.015	0.031	0.039
Daily tire wear reduction (Tons/Day)	0.192	0.243	0.115	0.146	0.307	0.389

TCM Package #6.3 (Ridesharing, preferential parking, SOV charge)

Scenario 1

DESCRIPTION OF PACKAGE:

- Ridesharing for small employers (25-99 employees) in concert with rideshare subsidy of $1/trip/day, parking charge of $1.00/Day/space and preferential free parking for carpoolers and vanpoolers.

Assumptions:

- For vanpool program commuters affected would be those living within 11 miles or more or more from work who are likely to vanpool. Those commuters are 18.2% of overall commuters in the county.
- The former modes of new riders are assumed to be similar to those found elsewhere in major urban areas.
- 40% of vanpooling participant drive their cars to park-n-ride.
- Likely outcomes presented include range of net vehicle trips adjusted for former vanpool and carpool riders and for park-and-ride travel.
- Low end range reflects standard effectiveness of such a measure in Los Angeles County.
- High end range reflects higher participation rate than experienced to date.

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	118,547	161,307	71,128	96,784	189,676	258,092
Daily VMT reduction	1,444,390	1,958,408	866,630	1,175,045	2,311,019	3,133,453
Daily CO reduction (Tons/Day)	36.697	49.860	17.108	23.244	53.805	73.104
Daily NOx reduction (Tons/Day)	1.730	2.348	1.179	1.600	2.909	3.948
Daily ROG reduction (Tons/Day)	3.493	4.742	1.766	2.398	5.259	7.140
Daily PM reduction (Tons/Day)	0.032	0.043	0.019	0.026	0.051	0.069
Daily tire wear reduction (Tons/Day)	0.318	0.432	0.191	0.259	0.509	0.691

TCM Package #7.1 (Bicycle and Walking subsidy, parking charge)

Scenario 1

DESCRIPTION OF PACKAGE:

- Bicycle and pedestrian improvement in concert with $1/day/trip walking and bicycling subsidy and a $0.50 Per day per space parking charge

Assumptions:

- 15% (691,922) of employees commuting between 1 to 3 miles to worksite are affected by this measure.
- The former mode of new riders are assumed to be similar to those found elsewhere in major urban areas.
- Likely outcomes presented represent range of net vehicle trips adjusted for former drive alone share.
- Low end range reflect standard effectiveness of such a measure in Los Angeles County.
- High end range reflects higher participation rate

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	11,558	13,209	8,553	9,775	**20,111**	**22,984**
Daily VMT reduction	30,672	35,054	18,160	20,755	**48,832**	**55,808**
Daily CO reduction (Tons/Day)	2.412	2.757	1.347	1.539	**3.759**	**4.296**
Daily NOx reduction (Tons/Day)	0.076	0.087	0.054	0.061	**0.130**	**0.149**
Daily ROG reduction (Tons/Day)	0.167	0.191	0.101	0.116	**0.268**	**0.307**
Daily PM reduction (Tons/Day)	0.001	0.001	0.000	0.000	**0.001**	**0.001**
Daily tire wear reduction (Tons/Day)	0.007	0.008	0.004	0.005	**0.011**	**0.012**

TCM Package #7.2 (Bicycle and Walking subsidy, parking charge)

Scenario 2

DESCRIPTION OF PACKAGE:

- Bicycle and pedestrian improvement in concert with $1/day/trip walking and bicycling subsidy and a $1.00 Per day per space parking charge

Assumptions:

- 15% (691,922) of employees commuting between 1 to 3 miles to worksite are affected by this measure.
- The former mode of new riders are assumed to be similar to those found elsewhere in major urban areas.
- Likely outcomes presented represent range of net vehicle trips adjusted for former drive alone share.
- Low end range reflect standard effectiveness of such a measure in Los Angeles County.
- High end range reflects higher participation rate

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	17,383	19,866	12,308	14,066	29,690	33,932
Daily VMT reduction	47,506	54,292	28,222	32,253	75,727	86,545
Daily CO reduction (Tons/Day)	3.642	4.163	1.955	2.234	5.598	6.397
Daily NOx reduction (Tons/Day)	0.116	0.133	0.079	0.091	0.195	0.223
Daily ROG reduction (Tons/Day)	0.253	0.289	0.149	0.170	0.402	0.459
Daily PM reduction (Tons/Day)	0.001	0.001	0.001	0.001	0.001	0.002
Daily tire wear reduction (Tons/Day)	0.010	0.012	0.006	0.007	0.017	0.019

TCM Package #7.3 (Bicycle and Walking subsidy, parking charge)

Scenario 3

DESCRIPTION OF PACKAGE:

- Bicycle and pedestrian improvement in concert with $1/day/trip walking and bicycling subsidy and a $3.00 Per day per space parking charge

Assumptions:

- 15% (691,922) of employees commuting between 1 to 3 miles to worksite are affected by this measure.
- The former mode of new riders are assumed to be similar to those found elsewhere in major urban areas.
- Likely outcomes presented represent range of net vehicle trips adjusted for former drive alone share.
- Low end range reflect standard effectiveness of such a measure in Los Angeles County.
- High end range reflects higher participation rate

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	38,170	76,340	26,031	52,062	64,201	128,401
Daily VMT reduction	103,645	207,289	71,574	143,147	175,218	350,437
Daily CO reduction (Tons/Day)	7.991	15.982	4.233	8.467	12.224	24.449
Daily NOx reduction (Tons/Day)	0.254	0.509	0.180	0.360	0.434	0.868
Daily ROG reduction (Tons/Day)	0.555	1.110	0.330	0.659	0.885	1.769
Daily PM reduction (Tons/Day)	0.002	0.005	0.002	0.003	0.004	0.008
Daily tire wear reduction (Tons/Day)	0.023	0.046	0.016	0.032	0.039	0.077

TCM #8.1 (TRO, parking fee, preferential parking)

Scenario 1

DESCRIPTION OF MEASURE:

- Trip reduction ordinance for small employers (25-99) in concert with parking charge of $0.50/space/day, and a free preferential parking for ridesharers.

Assumptions:

- 15% (691,922) of employees in Los Angeles County are working in sites with 25-99 employees
- The former mode of new riders are assumed to be similar to those found under SCAQMD Regulation XV.
- Likely outcome presented represent range of net vehicle trips adjusted for former drive alone share and park-and-ride travel.
- Low end range reflects standard effectiveness in Los Angeles County
- High end range reflects higher mode shift than expected

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	41,181	66,693	24,708	40,016	**65,889**	**106,710**
Daily VMT reduction	554,295	898,281	332,844	539,437	**887,140**	**1,437,718**
Daily CO reduction (Tons/Day)	13.304	21.552	6.205	10.053	**19.509**	**31.605**
Daily NOx reduction (Tons/Day)	0.645	1.045	0.442	0.717	**1.087**	**1.762**
Daily ROG reduction (Tons/Day)	1.296	2.100	0.654	1.060	**1.951**	**3.161**
Daily PM reduction (Tons/Day)	0.012	0.020	0.007	0.012	**0.020**	**0.032**
Daily tire wear reduction (Tons/Day)	0.122	0.198	0.073	0.119	**0.196**	**0.317**

TCM #8.2 (TRO, parking fee, preferential parking)
Scenario 2

DESCRIPTION OF MEASURE:

- Trip reduction ordinance for small employers (25-99) in concert with parking charge of $1.00/space/day, and a free preferential parking for ridesharers.

Assumptions:

- 15% (691,922) of employees in Los Angeles County are working in sites with 25-99 employees
- The former mode of new riders are assumed to be similar to those found under SCAQMD Regulation XV.
- Likely outcome presented represent range of net vehicle trips adjusted for former drive alone share and park-and-ride travel.
- Low end range reflects standard effectiveness in Los Angeles County
- High end range reflects higher mode shift than expected

Likely Trips, VMT, and Emission Reductions

Variable	Daily Peak		Daily Off-Peak		Daily Total	
	Standard	High	Standard	High	Standard	High
Daily Vehicle trip reduction	94,181	130,469	56,508	78,281	**150,689**	**208,7508**
Daily VMT reduction	1,261,868	1,748,898	746,522	1,050,199	**2,008,390**	**2,799,097**
Daily CO reduction (Tons/Day)	30.364	42.072	14.070	19.624	**44.435**	**61.697**
Daily NOx reduction (Tons/Day)	1.470	2.038	0.996	1.397	**2.467**	**3.434**
Daily ROG reduction (Tons/Day)	2.956	4.096	1.478	2.068	**4.433**	**6.164**
Daily PM reduction (Tons/Day)	0.028	0.039	0.016	0.023	**0.044**	**0.062**
Daily tire wear reduction (Tons/Day)	0.278	0.386	0.165	0.232	**0.443**	**0.617**