

INTRODUCTION

Transportation Control Measures (TCMs) are defined as transportation projects or programs that adjust trip patterns or otherwise modify vehicle use in ways that reduce air pollutant emissions. TCMs are included in the most recently approved applicable Air Quality Management Plan (AQMP)/State Implementation plan (SIP) as part of the overall control strategy to demonstrate a region's ability to come into attainment with the National Ambient Air Quality Standards (NAAQS). In the SCAG region, only two ozone nonattainment areas include TCMs in their AQMPs/SIPs: South Coast Air Basin and Ventura County portion of the South Central Coast Air Basin. TCM-type projects in these nonattainment areas are considered committed once they have funds programmed for right-of-way or construction in the first two years of an approved SCAG Federal Transportation Improvement Program (FTIP). When a committed TCM project cannot be delivered or will be significantly delayed, the substitution of the TCM project follows the process specified in the Clean Air Act (CAA) Section 176(c)(8).

The Los Angeles County Metropolitan Transportation Authority (Metro) has requested that SCAG substitute a planned park and ride lot facility project which is included as a committed TCMs in the South Coast Ozone SIP with four different projects in Los Angeles (see Appendix A). As documented herein, the proposed substitution is consistent with all federal requirements, including the MPA-21 planning requirements and the U.S. Environmental Protection Agency's (EPA) Transportation Conformity Regulations.

TCM SUBSTITUTION PROCESS

The substitution process set forth in MAP-21 and the Transportation Conformity Regulations is included in the 2007 AQMP for the South Coast Air Basin and described in SCAG's 2015 FTIP Guidelines.

The County Transportation Commissions (CTCs) and/or project sponsors notify SCAG when a TCM project cannot be delivered or will be significantly delayed. SCAG and the CTCs then identify and evaluate possible replacement measures for individual substitutions with consultation of the TCWG, which includes members from all affected jurisdictions, federal, state and/or local air quality agencies and transportation agencies.

Substitution of individual TCMs is provided for by the CAA Section 176(c)(8), under the following conditions:

- "(i) if the substitute measures achieve equivalent or greater emissions reductions than the control measure to be replaced, as demonstrated with an emissions impact analysis that is consistent with the current methodology used for evaluating the replaced control measure in the implementation plan;
- "(ii) if the substitute control measures are implemented-
 - "(I) in accordance with a schedule that is consistent with the schedule provided for control measures in the implementation plan; or
 - "(II) if the implementation plan date for implementation of the control measure to be replaced has passed, as soon as practicable after the implementation plan date but not



later than the date on which emission reductions are necessary to achieve the purpose of the implementation plan;

"(iii) if the substitute and additional control measures are accompanied with evidence of adequate personnel and funding and authority under State or local law to implement, monitor, and enforce the control measures;

"(iv) if the substitute and additional control measures were developed through a collaborative process that included--

"(I) participation by representatives of all affected jurisdictions (including local air pollution control agencies, the State air pollution control agency, and State and local transportation agencies);

"(II) consultation with the Administrator; and

"(III) reasonable public notice and opportunity for comment; and

"(v) if the metropolitan planning organization, State air pollution control agency, and the Administrator concur with the equivalency of the substitute or additional control measures."

In addition to the conditions above, the 2007 South Coast AQMP states that the substitute project shall be in the same air basin and preferably be located in the same geographic area and preferably serve the same demographic subpopulation as the TCM being replaced.

A TCM substitution does not require a new conformity determination or a formal SIP revision. SCAG adoption of the new TCM with concurrence of the U.S. EPA and the California Air Resources Board (ARB) rescinds the original TCM and the substitution becomes effective.

PROJECT DESCRIPTION

The 2015 FTIP includes a committed TCM project for constructing a park and ride lot facility in the City of Long Beach (FTIP ID LAE0332). The project is requested by the City of Long Beach to be canceled due to lack of funding. To mitigate the proposed cancellation of the TCM project, Metro is proposing to substitute two park and ride lot facilities and two bike lane projects at various locations within the Los Angeles County portion of the South Coast Air Basin. The proposed substitute projects will be operational by 2017 so that the emission reductions from these substitute projects can achieve the purpose of the South Coast ozone SIPs. The four substitute projects are all new projects and are not yet classified as committed TCMs.

COMPLIANCE WITH SUBSTITUTION REQUIREMENTS

Interagency Consultation. The proposed substitution was presented to SCAG's publicly noticed TCWG meeting on April 28, 2015 for interagency consultation. The TCM substitution request document is being released for a 15-day public review period.

Equivalent Emissions Reduction. Metro has analyzed the countywide emissions impacts of the substitute projects and concluded that the replacement projects provide equal or greater emission reductions (see Appendix A). SCAG staff has reviewed and concurred with both the methodology and the results of the analysis.



Similar Geographic Area. Both the Long Beach park and ride lot facility project and the four substitute projects are located in the Los Angeles Riverside County portion of the South Coast Air Basin.

Full Funding. The four substitute projects are fully funded utilizing local funds, Congestion Mitigation Air Quality fund, and Active Transportation Program fund.

Similar Time Frame. The proposed substitute TCMs will be operational by 2017 which is the earliest practical date and not later than the date on which emissions reductions from the substitute TCMs are necessary to achieve the purpose of the South Coast Ozone SIPs.

Timely Implementation. The proposed substitution is the means by which the obstacle to implementation of the Long Beach park and ride lot facility TCM is being overcome. The replacement projects will be monitored through TCM Timely Implementation Reports that SCAG releases for public review and submits for federal approval.

Legal Authority. Metro has legal authority and personnel to implement and operate the substitute projects.

Agency Review and Adoption. After the 15-day public review period, the substitution will be presented to SCAG's Energy and Environment Committee (EEC) for recommendation to SCAG's Regional Council for adoption. Upon EEC's recommendation, the substitution will be presented to SCAG's Regional Council for adoption. Adoption by the Regional Council and concurrence from U.S. EPA and ARB will rescind the original TCM projects and the new measure will become effective.

Programming of the Substitute TCMs. After obtaining the concurrence from ARB and EPA, the substitute TCMs will be included into the conforming FTIP.



Appendix A

Metro Substitution Request





Metro

Los Angeles County
Metropolitan Transportation Authority

One Gateway Plaza
Los Angeles, CA 90012-2952

213.922.2000 Tel
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May 6, 2015

Hasan Ikhata
Executive Director
Southern California Association of Governments
818 West Seventh Street, 12th Floor
Los Angeles, CA 90017

Attention: Rongsheng Luo

**SUBSTITUTE 2015 FTIP TCM PROJECTS
LAE0332: MTA BLUE LINE PARK AND RIDE FACILITY**

Dear Mr. Ikhata,

The Los Angeles County Metropolitan Transportation Authority (LACMTA) has identified that the City of Long Beach deleted a Transportation Control Measure (TCM) project, LAE0332: *MTA Blue Line Park and Ride Facility* from LACMTA's 2015 Transportation Improvement Program (TIP), due to a loss of redevelopment funds originally programmed as a match.

LACMTA requests that SCAG allow project LAE0332 in the 2015 RTIP to be substituted with projects *Santa Clarita Park & Ride Facility, Old Town Calabasas Park & Ride Facility, Vincent Community Bikeway Access, and Athens & West Carson Community Bikeway*. These projects are collectively similar in scope, geographical area, and completion timelines. Thus the substitution will offer comparable air quality benefits to the region. The enclosed document includes an air quality emissions reduction analysis, comparing the deleted project to the recommended substitutes.

LACMTA is eager to move forward with the substitution projects and would greatly appreciate your assistance in working through the substitution process with our State and Federal partners.

Please contact Jeseong Chung at (213) 922-2478 or chungje@metro.net should you have any questions. Thank you.

Sincerely,

Wil Ridder
Executive Officer
Strategic Financial Planning & Programming

1. Introduction

LACMTA is requesting to substitute Project LAE0332: Long Beach Park and Ride Lot Facility at 3rd St. & Pacific Ave. with the following four projects, which are not in the 2015 FTIP; (1) Old Town Calabasas Park and Ride Facility by the City of Calabasas, (2) Vincent Community Bikeway Access by the County of Los Angeles, (3) West Athens and West Carson Community Bikeways by the County of Los Angeles, and (4) Arcadia Bike Facility Improvement project by the City of Arcadia. These four projects will be included in the 2015 TIP via FTIP amendment process once the substitution process is approved.

1-1 Original Project Description

Long Beach Park and Ride Lot Facility at 3rd St. and Pacific Ave

The Long Beach Park & Ride Lot project proposed at 3rd Street and Pacific Avenue south of the Metro Blue Line Pacific station would provide approximately 400 parking spaces for Metro Blue Line users. However, the project has been requested to be cancelled by the City of Long Beach due to lack of funding.

1-2 Substitution Project Description

Santa Clarita Park and Ride Facility:

The project proposes the construction of a Park and Ride lot that will have approximately 150 parking spaces at State Route 14 and Newhall Avenue. The routes that will be served are Commuter Express Routes that go to Century City, Downtown Los Angeles, Warner Center and North Hollywood. In addition, this lot will serve carpools and vanpools.

Old Town Calabasas Park and Ride Facility:

The City of Calabasas proposes a Park & Ride lot project in Old town Calabasas to purchase and construct a Park and Ride Lot with 72 parking spaces. The proposed Park and Ride Lot is located 1,000 feet from the Mulholland Highway/Valley Circle on-ramp to the US 101 and through being 700 feet from a stop for Metro's Line 161 and will allow residents of the City of Calabasas to park their vehicles and conveniently take public transportation/ vanpool/carpool to work or other activities throughout Los Angeles County.

Vincent Community Bikeway Access:

The project is located in the unincorporated Vincent community and the Cities of Azusa and West Covina. The scope of work includes installation of Class I bike path (2.01 miles) along the Big Dalton Wash between Irwindale Avenue and Lark Ellen Avenue, and between Arrow Highway and Citrus Avenue. Two Class II bike lanes (1.08 miles) are proposed along Irwindale Avenue between the Class I bike path and existing bikeways on Sunset Avenue and along Badillo Street between Irwindale Avenue and Orange Avenue to connect to the existing bike lane along Badillo Street and Ramona Boulevard.

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Athens and West Carson Community Bikeways:

The Athens and West Carson Community Bikeways project will design and construct Class II bike lanes on Normandie Avenue between Imperial Hwy and El Segundo Boulevard (1 mile), 120th Street between Western Avenue and Vermont Avenue (1 mile), Lomita Boulevard between Frampton Avenue and Vermont Avenue (0.48 miles), and Carson Street between Normandie Avenue and Vermont Avenue (0.51 miles).

2. Compliance with Substitution Requirements

- **Equivalent Emissions Reduction:** LACMTA has analyzed the countywide emissions impacts of the proposed substitute TCM projects, and concludes that collectively, the four substitution projects provide greater emissions reduction than the emissions reduction of the original TCM project. See the methodology and the results in Section 3 and Section 4.
- **Similar Geographic Area:** The Long Beach Park and Ride Facility project and four substitution projects (Santa Clarita Park & Ride Facility, Old Town Calabasas Park & Ride Facility, Vincent Community Bikeway Access, and Athens and West Carson Community Bikeways) are located in the Los Angeles County portion of the South Coast Air Basin.
- **Full Funding:** Proposed substitution projects are full funded utilizing local funds, Congestion Mitigation Air Quality Funds, and Active Transportation Program.
- **Similar Time Frame:** The proposed substitution TCM projects will be operational in 2017 not later than the date on which emission reductions are necessary to achieve the purpose of the implementation plan.
- **Timely Implementation:** The proposed substitution is the means by which the obstacle to implementation of the Long Beach Park and Ride Facility TCMs is being overcome.
- **Legal Authority:** LACMTA has legal authority and personnel to implement the substitute TCM projects.

3. Methodology

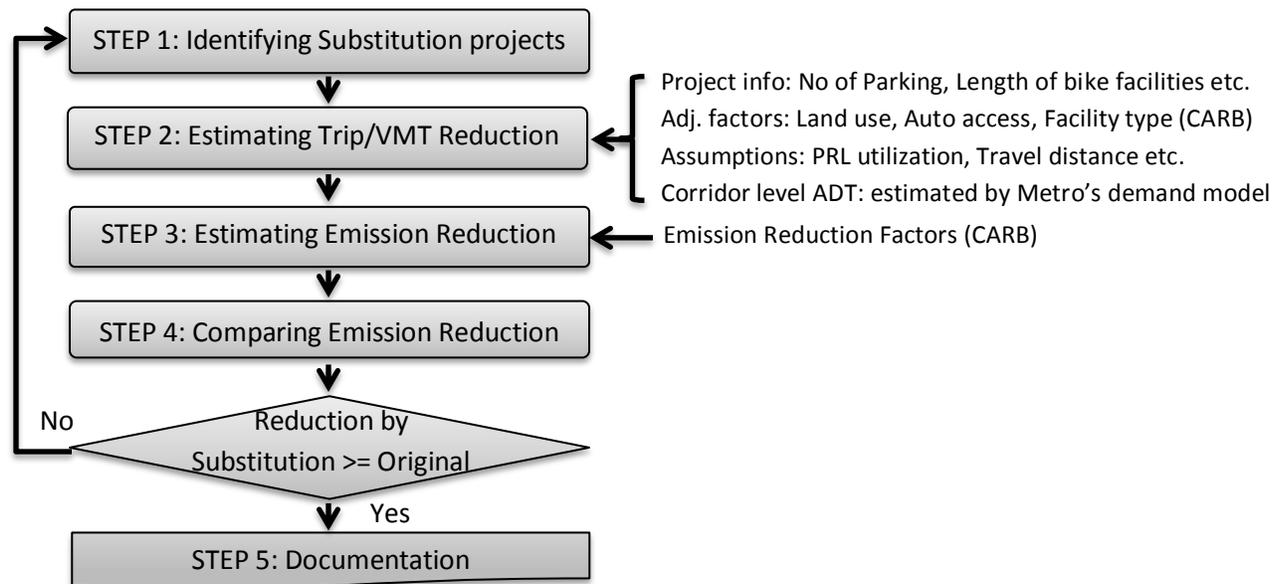
In order to verify that these projects have similar air quality benefits and thus can be substituted for one another, we conducted an air quality benefits analysis based on the “Methods to Find the Cost-Effectiveness of Funding Air Quality Projects For Evaluating Motor Vehicle Registration Fee Projects and Congestion Mitigation and Air Quality Improvement (CMAQ) Projects” published by the California Air Resources Board (ARB) in May 2005 (validated in 2013), as well as 2013 Emission Factor Tables (also by ARB).

This was conducted through a five step process; (1) Identifying potential substitution projects (2) Estimating the Vehicle Miles Travelled (VMT) reduction and trip reduction for commute trips based on

TCM Substitution Technical Analysis

the number of parking spaces and parking lot utilization ratio (for PRL projects) and length of bike facilities and ADT (for bicycle facility projects) (3) Estimating air emission reduction by multiplying number of trips/VMTs and air emission factors (4) Comparing air quality benefits of original project with the substitution projects, then (5) Documenting the results. Figure below presents the air emission reduction benefits estimation process.

Figure 3-1 Air Emission Reduction Benefits Analysis Process



3-1 Formulas, Input Values, and Assumption for Park & Ride Lot Projects

Provision of park and ride lots (PRL) would promote the use of public transit (if the PRL is located near transit stops) or encourage the formation of vanpools and carpools. The emission reduction benefits from PRLs come from the reduction of auto trips by transit, vanpool, or carpool services after adjusting for the increase in emissions associated with the vanpool/carpool vehicle itself and auto access trips to and from PRL.

Formulas

$$\text{Annual Auto Trip Reduced} = [(D) * (R) * (A)] * [1 - (AA)] \quad \text{trips/year}$$

$$\text{Annual Auto VMT Reduced} = [(D) * (R) * (A)] * [(L) - (AA) * (LL)] \quad \text{miles/year}$$

$$\begin{aligned} \text{Annual Emission Reductions (ROG, NOx, and PM10)} = \quad & \text{lbs/year} \\ & [(\text{Annual Auto Trips Reduced}) * (\text{Auto Trip End Factor}) \\ & + (\text{Annual Auto VMT Reduced}) * (\text{Auto VMT Factor}) \\ & - (\text{Van VMT}) * (\text{Van VMT Factor})] / 454 \end{aligned}$$

$$\text{Ridership (R)} = (\text{Parking Spaces}) * (\text{Lot Utilization}) * (2 \text{ commute trips/day})$$

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$$\text{Van VMT} = [(R)/5]*(L)*(D)$$

(Assume 5 passenger per Vanpool)

Note

- Lot Utilization is the estimated lot utilization rate from monitored data OR use 0.75 as a default.
- The default for Adjustment (AA) for Auto Access to and from rail service is 0.5.
- The default for Adjustment (AA) for Auto Access to and from vanpool/shuttle should be 0.9 instead of 0.5.

Table 3-1 Input Values for Park & Ride Lot Projects (CARB – May, 2013)

Inputs	Default	Units	Comments
For the Vanpool			
Days (D)	250	days (of operation)/year	Suggested defaults are weekday vanpools - 250 days
Ridership (R)		total trips (riders)/day	One-way trips by riders (or number of boardings) per day
Annual Van/Shuttle VMT (Van VMT)		annual miles	
For Auto Travel Reduced			
Adjustment (A) on Auto Trips: Portion of riders who did NOT previously use transit or vanpools.	0.3 (for vanpool) 0.3 (for rail)		The default (0.83) is for long-distance, commuter vanpool service. For new rail feeders, use 0.3 for the adjustment factor A.
Auto Trip Length (L)	25 (for vanpool) 8 (for rail)	miles one direction/trip	Suggested default for vanpools is 35 mile. 25 miles is used in this report
For Auto Travel Added to Access Vanpool/Shuttle			
Adjustment (AA) for Auto Access to and from PRL	0.75 (for Vanpool) 0.5 (for rail)		Enter the percentage of riders who drive to the vanpool service. The default (0.75) is for long-distance vanpools. For rail feeders, use 0.5.
Trip Length (LL) for Auto Access to and from vanpool/shuttle	5 (for vanpool) 2 (for rail)	miles one direction/trip	The default (5 mi) is for long-distance van pools. For rail feeders, use 2 mi.

Table 3-2 Total Average Auto Emission Factor (CARB – May, 2013)

Project Life	Grams per Commute Trip End			
	ROG	CO	NOx	PM2.5
1~5 years (2011~2015)	0.764	6.046	0.303	0.006
6~10 years (2011~2020)	0.614	4.083	0.233	0.004
16~20 years (2014~2035)	0.462	3.593	0.162	0.004
Project Life	Grams per Vehicle Mile			
	ROG	CO	NOx	PM2.5
1~5 years (2014~2017)	0.191	2.239	0.217	0.087
6~10 years (2014~2023)	0.153	1.783	0.172	0.087
16~20 years (2014~2035)	0.119	1.356	0.13	0.087

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3-2 Formulas, Input Values, and Assumption for Bicycle Facility Projects

Bicycle and pedestrian projects/programs include a wide range of investments and strategies to facilitate and encourage non-motorized travel from bike path, bike share program to pedestrian urban design enhancements. Among these various strategies this report only includes bike path (Class I) and bike lane (Class II).

Formulas

$$\begin{aligned} \text{Annual Auto Trip Reduced} &= (D) * (ADT) * (A + C) && \text{trips/year} \\ \text{Annual Auto VMT Reduced} &= (\text{Auto Trips}) * (L) && \text{miles/year} \\ \text{Annual Emission Reductions (ROG, NOx, and PM10)} &= && \text{lbs/year} \\ &= \frac{[(\text{Annual Auto Trips Reduced}) * (\text{Auto Trip End Factor}) + (\text{Annual Auto VMT Reduced}) * (\text{Auto VMT Factor}) - (\text{Van VMT}) * (\text{Van VMT Factor})]}{454} \end{aligned}$$

Table 3-3 Input Values for Bicycle Facility Projects (CARB – May, 2013)

Inputs	Default	Units	Comments
Days (D)	200	days (of operation)/year	Consider local climate in number of days used.
Average Length (L) of bicycle trips	1.8	Miles per trip in one direction	Default is based on the National Personal Transportation Survey
Annual Average Daily Traffic (ADT)		Trips per day	Two-direction traffic volumes on roadway parallel to bike project. MAXIMUM IS 30,000.
Adjustment (A) on ADT for auto trips replaced by bike trips from the bike facility.	0.002		See Table I-3 Adjustment Factors table
Credit (C) for Activity Centers near the project.	0.0005		See Table I-4 Activity Centers table

Table 3-4 Adjustment Factors on ADT (CARB – May, 2013)

Bike Facility Class	Annual Average Daily Traffic (ADT)	Length of Bike Project (one direction)	Adjustment Factors for Cities with POP. > 250,000 and non-university towns < 250,000	Adjustment Factors for University Towns with POP. < 250,000
Class I (bike path) & Class II (bike lane)	ADT ≤ 12,000 vehicles a day	≤ 1 mile	0.0019	0.0104
		>1 & ≤ 2 miles	0.0029	0.0155
		> 2 miles	0.0038	0.0207

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Class I (bike path) & Class II (bike lane)	12,000< ADT	≤ 1 mile	0.0014	0.0073
	≤24,000	>1 & ≤ 2 miles	0.002	0.0109
	vehicles per day	> 2 miles	0.0027	0.0145
Class II bike lane	24,000< ADT	≤ 1 mile	0.001	0.0052
	≤30,000	>1 & ≤ 2 miles	0.0014	0.0078
	vehicles per day	> 2 miles	0.0019	0.0104

Table 3-5 Activity Center Credits (CARB – May, 2013)

Number of activity centers*	Credit (C) Within 1/2 mile	Credit (C) Within 1/4 mile
Three (3)	0.0005	0.001
More than 3 but less than 7	0.001	0.002
7 or more	0.0015	0.003

- Types of Activity Centers: Bank, church, hospital or HMO, light rail station (park & ride), office park, post office, public library, shopping area or grocery store, university or junior college
- The number of activity centers within 1/4 mile and/or 1/2 mile from the project corridor was provided by project sponsors

4. Air Quality Benefits Equivalency

The methodologies and input data discussed in Chapter 2 were used to estimate emissions reductions for the Long Beach Park & Ride Facility project and the four substitution projects to demonstrate that the substitute measures have equivalent or greater emissions reductions than the control measure to be replaced.

4-1 Emission Reduction by Original Project

Table 4-1 presents the air quality benefits, in units of “lbs per year” associated with the control measure (400 park and ride spaces at the Long Beach Park & Ride facility) for three horizon years: 2016, 2023, and 2035.

Table 4-1 Air emission reduction by original project (lbs)

Annual Emission Reduction	ROG	CO	NOx	PM2.5
2016	170.6	1,855.4	165.8	60.7
2023	153.5	1,618.2	147.1	68.1
2035	140.8	1,493.7	131.1	80.8

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4-2 Emission Reduction by Substitution Projects

Table 4-2 presents the air quality benefits, in units of “lbs per year” associated with substitution measures (222 park and ride spaces at the Santa Clarita Park & Ride facility and the Old town Calabasas Park & Ride facility and 6.09 miles of Class I and Class II bike facilities in the County of Los Angeles) for three horizon years: 2016, 2023, and 2035.

Table 4-2 Air emission reduction by substitute projects (lbs)

Annual Emission Reduction	ROG	CO	NOx	PM2.5
2016	272.1	2,674.6	209.1	63.4
2023	249.5	2,340.5	196.1	78.2
2035	218.1	2,183.1	176.3	99.1

4-3 Summary of Results

The results clearly indicate that the proposed substitution projects - Santa Clarita Park & Ride facility, Old town Calabasas Park & Ride facility, Vincent Community Bikeway, and Athens and West Carson Community Bikeway – will have higher air quality benefits as compared to the Long Beach Park & Ride facility project. The net air quality benefits of the substitute projects as compared to the Long Beach Park & Ride facility project are summarized in Table 4-3.

Table 4-3 Comparison: Substitution - Original (lbs)

Annual Emission Reduction	ROG	CO	NOx	PM2.5
2016	101.5	819.3	43.4	2.7
2023	96.0	722.4	49.0	10.1
2035	77.3	689.4	45.2	18.3

A-1 Original Project:

Long Beach Park & Ride Facility

Year	TRIP REDUCTION	VMT REDUCTION
2016	22,507	315,101
2023	25,271	353,797
2035	30,010	420,134

INPUT VALUES		
Total Space	400	
Average Daily Utilization		
2016	75%	
2023	84%	
2035	100%	
Turnover	1	
Percent Effectiveness		
Adjustment on Auto trips replaced by PRL	30%	
Adjustment for Auto Access	50%	
Vehicle Trips (In/Out)	2	
Avg. Commute Distance	8	
Avg. Travel Distance to PRL	2	
Reduction Days/Year	250	
Annual TRIP Reduction		
2016	22,507	
2023	25,271	
2035	30,010	
Annual VMT reduction		
2016	315,101	
2023	353,797	
2035	420,134	
Annual Factor		
Days in a Year	365	
Weeks in a Year	52	
Slow Days in a Week	2.21	
Negligible Days		115
Trip Reduction Days/Year		250

*Urban Park & Ride Lot utilization rate in opening year estimated as 75%.

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A-2 Substitution Projects

Santa Clarita Park & Ride Facility

Year	TRIP REDUCTION	VMT REDUCTION
2016	2,345	181,166
2023	2,949	227,888
2035	3,986	307,982

INPUT VALUES

Total Space	150	
Average Daily Utilization*		
2016	50%	
2023	63%	
2035	85%	
Turnover	1	
Percent Effectiveness	0	
Adjustment on Auto trips replaced by PRL	25%	
Adjustment for Auto Access	75%	
Vehicle Trips (In/Out)	2	
Avg. Commute Distance	25	
Avg. Travel Distance to PRL	5	
Reduction Days/Year	250	

Annual TRIP Reduction

2016	2,345	
2023	2,949	
2035	3,986	

Annual VMT reduction

2016	199,283	
2023	250,676	
2035	338,780	

Annual VAN VMT (assuming 11 passengers Van)

2016	18,117	
2023	22,789	
2035	30,798	

Annual Factor

Days in a Year	365	
Weeks in a Year	52	
Slow Days in a Week	2.21	
Negligible Days		115
Trip Reduction Days/Year		250

*Suburban Park & Ride Lot utilization rate in opening year estimated as 50%.

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Old Town Calabasas Park & Ride Facility

Year	TRIP REDUCTION	VMT REDUCTION
2016	1,125	86,960
2023	1,416	109,386
2035	1,913	147,831

INPUT VALUES

Total Space	72	
Average Daily Utilization		
2016	50%	
2023	63%	
2035	85%	
Turnover	1	
Percent Effectiveness	0	
Adjustment on Auto trips replaced by PRL	25%	
Adjustment for Auto Access	75%	
Vehicle Trips (In/Out)	2	
Avg. Commute Distance	25	
Avg. Travel Distance to PRL	5	
Reduction Days/Year	250	

Annual TRIP Reduction

2016	1,125	
2023	1,416	
2035	1,913	

Annual VMT reduction

2016	95,656	
2023	120,325	
2035	162,615	

Annual VAN VMT (assuming 11 passengers Van)

2016	8,696	
2023	10,939	
2035	14,783	

Annual Factor

Days in a Year	365	
Weeks in a Year	52	
Slow Days in a Week	2.21	
Negligible Days		115
Trip Reduction Days/Year		250

*Suburban Park & Ride Lot utilization rate in opening year estimated as 50%.

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Vincent Community Bikeway Access

Year	TRIP REDUCTION	VMT REDUCTION
2016	32,993	26,216
2023	33,053	26,553
2035	33,156	27,132

INPUT VALUES						
Street	Irwindale Ave.	Big Dalton Wash	Big Dalton Wash	Badillo St.		
Limits	340ft n/o Cypress St. and 650ft s/o Badillo St.	Irwindale Ave. and Lark Ellen Ave.	Arrow Highway and Citrus Ave.	Orange Ave. and Irwindale Ave.		
Length (mile)	0.64	1.01	1.00	0.44		3.09
Class/Type	Class II	Class I	Class I	Class II		
Average Daily Traffic (ADT)*						
	2016	17,538	10,039	24,842	11,737	64,156
	2023	17,407	9,785	26,807	10,936	64,935
	2035	17,182	9,349	30,175	9,564	66,270
Adjustment Factors						
Class I & II Bike Path	0.0014	0.0029	0.0010	0.0019		
Activity Center Credit	0.0010	0.0010	0.0010	0.0010		
Avg. Length of Bike Trip	1.8	1.8	1.8	1.8		
Reduction Days/Year	200	200	200	200		
Annual TRIP Reduction						
	2016	8,418	7,831	9,937	6,808	32,993
	2023	8,355	7,632	10,723	6,343	33,053
	2035	8,248	7,292	12,070	5,547	33,156
Annual VMT reduction						
	2016	5,368	7,934	9,910	3,004	26,216
	2023	5,328	7,733	10,694	2,799	26,553
	2035	5,259	7,388	12,037	2,448	27,132
Annual Factor						
Days in a Year		365				
Weeks in a Year		52				
Slow Days in a Week		3.17				
Negligible Days			165			
Trip Reduction Days/Year			200			

*Estimated by LA Metro demand estimation model (2015)

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Athens and West Carson Community Bikeways

Year	TRIP REDUCTION	VMT REDUCTION
2016	43,803	30,768
2023	46,296	33,406
2035	42,874	30,223

INPUT VALUES						
Street	Normandie Ave.	Lomita Blvd.	Carson St.	120th St.		
Limits	Imperial Hwy and El Segundo Blvd.	Frampton Ave. and Vermont Ave.	Normandie Ave. and Vermont Ave.	Western Ave. and Vermont Ave.		
Length (mile)	1.00	0.48	0.51	0.99		2.99
Class/Type	Class II	Class II	Class II w Diet	Class II		
Average Daily Traffic (ADT)*						
2016	23,396	38,506	25,695	11,884		99,480
2023	23,627	38,099	25,410	11,579		98,715
2035	24,025	37,402	24,920	11,058		97,404
Adjustment Factors						
Class I & II Bike Path	0.0014	0.0010	0.0010	0.0019		
Activity Center Credit	0.0010	0.0010	0.0010	0.0010		
Avg. Length of Bike Trip	1.8	1.8	1.8	1.8		
Reduction Days/Year	200	200	200	200		
Annual TRIP Reduction						
2016	11,230	15,402	10,278	6,893		43,803
2023	14,176	15,240	10,164	6,716		46,296
2035	11,532	14,961	9,968	6,414		42,874
Annual VMT reduction						
2016	11,246	7,389	5,283	6,851		30,768
2023	14,196	7,311	5,224	6,675		33,406
2035	11,548	7,177	5,123	6,375		30,223
Annual Factor						
Days in a Year	365					
Weeks in a Year	52					
Slow Days in a Week	3.17					
Negligible Days		165				
Trip Reduction Days/Year		200				

*Estimated by LA Metro demand estimation model (2015)