TECHNICAL MEMORANDUM

To: Jennifer Rice, City of San Luis Obispo

From: Carla Dietrich, Michael Baker International

CC: Tom Tracy, Michael Baker International

Date: September 25, 2020; Revised November 5, 2020

Subject: 862 Aerovista Place VMT Analysis

Introduction

The purpose of this memorandum is to document a VMT analysis for the proposed general office and medical office building project (Project) located in the City of San Luis Obispo, California. The Project is proposed on a vacant parcel of land that is approximately 2.4 acres located at 862 Aerovista Place. The 36,000 square-foot building is anticipated to be a mix of general office (45%) and medical office (55%). This memorandum has been prepared to support the Transportation component of the California Environmental Quality Act (CEQA) process. **Exhibit 1** shows the location of the project and **Exhibit 2** shows the conceptual site plan.

Exhibit 1: Project Location

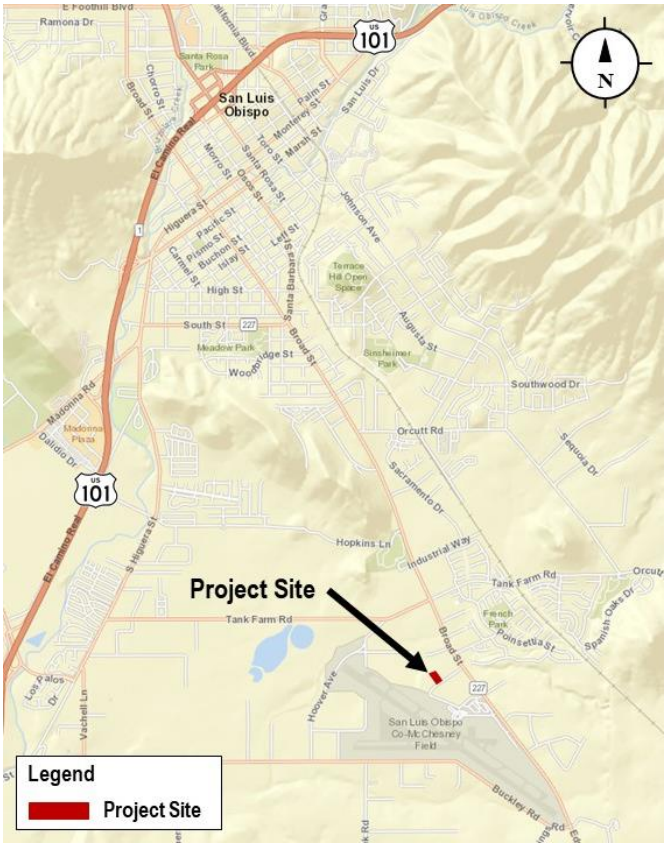
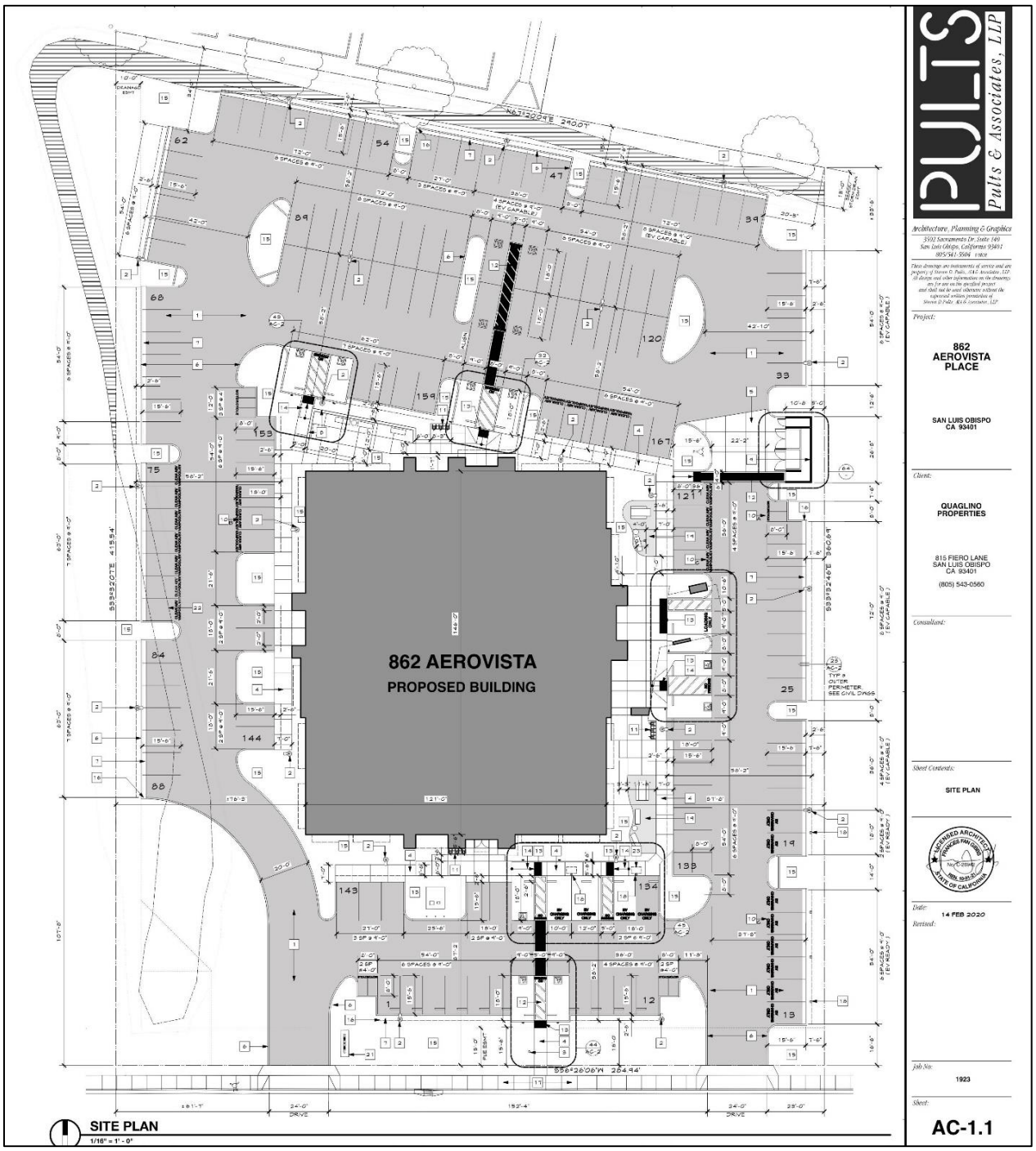


Exhibit 2: Conceptual Site Plan



Michael Baker INTERNATIONAL

Analysis Guidelines

The City of San Luis Obispo *Multimodal Transportation Impact Study Guidelines* (June 2020, 2nd Edition) (*City Guidelines*) and the Governor's Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA,* December 2018 *(Technical Advisory)* have been utilized in the development of this analysis.

Project Trip Generation Analysis

The number of Project site trips was estimated using the Institute of Transportation Engineers' (ITE) *Trip Generation Manual* (10th Edition). **Table 1** shows the ITE trip generation rates used for this analysis and **Table 2** shows the estimated trips generated by the project.

Table 1: Trip Generation Rates

Land Use	ITE Code	Daily Trip Rate	AM Peak Hour			PM Peak Hour		
			Rate	In	Out	Rate	In	Out
General Office	710	9.74 / KSF	1.16	86%	14%	1.15	16%	84%
Medical Office	720	34.8 / KSF	2.78	78%	22%	3.46	28%	72%

Notes:
1) KSF = Thousand Square Feet

Table 2: Estimated Project Trips

Land Use	ITE Code	Intensity		Daily Trips	AM Peak Hour			PM Peak Hour		
					Volume	In	Out	Volume	In	Out
General Office	710	16.2	KSF	158	19	16	3	19	3	16
Medical Office	720	19.8	KSF	689	55	43	12	69	19	50
Total				**847**	**74**	**59**	**15**	**88**	**22**	**66**

Notes:
1) KSF = Thousand Square Feet
2) Values may vary slightly due to rounding.

Screening Criteria

Per *City Guidelines* and *Technical Advisory,* land use projects that meet the screening thresholds identified in **Table 3** are assumed to result in a less-than-significant transportation impact under CEQA and do not require a detailed quantitative VMT assessment. **The Project does not meet any of the Screening Criteria for land use projects which would allow a determination of a less-than-significant impact on VMT, thus a project-specific VMT assessment is required.**

Table 3: Screening Criteria for Land Use Projects Exempt from VMT Analysis

Project Type	OPR Recommended Threshold	Project Evaluation	Result
Small Development Projects	Projects anticipated to generate < 110 daily vehicle trips (11 peak hour vehicle trips) may be assumed to cause a less-than-significant impact, unless substantial evidence indicates that a project would generate a potentially significant level of VMT or create inconsistency with the SLOCOG RTP Sustainable Communities Strategy (SCS).	Project is anticipated to generate 847 daily trips.	Does Not Meet Criteria
Medium-Sized Residential & Employment-Based (Office, Business Park, Industrial, etc.) Development Projects	Map-based screening may be used for projects that generate <100 peak hour vehicle trips. Baseline VMT per capita/employee heat maps are developed based on data from the SLO TDM, showing existing average Residential and Work VMT for each area of the City. Where proposed projects that generate <100 peak hour trips are located within areas of the map with existing VMT at least 10% below adopted thresholds, and are generally similar to existing uses within that area (i.e. density, mix of uses, access to multimodal transportation), these projects can be assumed to cause a less-than-significant transportation impacts.	Project is anticipated to generate 74 AM Peak Hour trips and 88 PM Peak Hour trips, however the project is located in an area "115% – 130% of Average VMT" on the Work Screening Map.	Does Not Meet Criteria
Local Serving Retail & Public Facilities	Retail development projects with ≤ 50,000 sf. gross floor area with reasonable justification that uses will be local-serving may be assumed to cause a less-than-significant impact. Similarly, local-serving public facilities, such as Police and Fire Stations, libraries, neighborhood parks without sporting fields, etc., may be assumed to cause a less-than-significant impact.	Project does not include local serving retail or public facilities.	Does Not Meet Criteria
Affordable Housing	Adding affordable housing in infill locations generally improves jobs-housing balance, in turn shortening commutes and reducing VMT. A project consisting of a high percentage of affordable housing (>50%) may be assumed to cause a less-than- significant impact on VMT if located within a low-VMT area per the City's VMT screening maps (see Appendix A) or where supporting evidence is provided that demonstrates low VMT-generating characteristics of similar affordable housing sites within the City.	Project does not include any housing.	Does Not Meet Criteria
Transit-Oriented Development	Per CEQA Guidelines, residential, retail, office and mixed-use projects that are located within a ½ mile of an existing major transit stop or an existing stop along a high- quality transit corridor may be assumed to cause a less-than-significant impact on VMT (see Note below). If project-specific or location-specific information indicates that the project would still generate significant levels of VMT, focused VMT analysis may still be required. No locations within the City of San Luis Obispo currently meet these transit service levels.	No locations within the City of San Luis Obispo currently meet these transit service levels.	Does Not Meet Criteria

Notes: 1. A "major transit stop" is defined as a site containing an existing rail station, a ferry terminal serviced by bus or rail transit, or the intersection of two or more major bus routes with a frequency of 15 minutes or less during commute periods. A "high-quality transit corridor" refers to a corridor with fixed-route bus service with frequencies of 1 minutes or less during peak commute hours.

VMT Threshold of Significance

Table 4 shows the thresholds of significance per the *City Guidelines.* The "Office / Business Park / Industrial / Warehousing / Manufacturing" was chosen as the appropriate category for this project. Therefore, the project-specific criteria have been identified as **15% below the existing regional (County) average work VMT per employee, or 12.45 VMT per employee**.

Table 4: VMT Thresholds of Significance

Project Type	Evaluation Criteria	Threshold[1]
Residential	15% below baseline Regional (County) average Residential VMT per capita. Applies to single-family, multi-family and mobile homes	14.25 VMT per capita
Office / Business Park / Industrial / Warehousing / Manufacturing	15% below existing Regional (County) average Work VMT per employee.	12.45 VMT per employee
Retail / Hotel / School	Net increase in total Regional (County) VMT. Small local-serving retail may be presumed to cause less- than-significant impacts. Larger, regional-serving retail will require quantitative analysis using the SLO TDM and project-specific information, such as market studies or analysis of anticipated customer travel behavior.	No set threshold, increase in total VMT would trigger impact
Mixed-Use	Evaluate each component of a mixed-use project independently, applying significance threshold for each land use type. Alternately, the City may choose to analyze VMT for only the dominant use. Analysis should take credit for internal capture between uses.	Apply Residential, Office & Retail Thresholds above
Redevelopment Projects	Where a development replaces an existing VMT- generating land use, if the replacement total VMT leads to a net overall decrease in VMT, the project is assumed to have a less-than-significant impact. If net new VMT exceeds the existing land use, apply the thresholds described above.	No set threshold
Other Development Projects	City may apply adopted residential, office or retail VMT thresholds to other development projects that have predominant operating characteristics similar to those uses. Alternately, City may use more location-specific information to develop specific thresholds for other land use types. In doing so, analysis should consider the information described in the CEQA Guidelines (Section 15064.7) on the development of thresholds of significance.	No set threshold. Evaluated on case-by-case basis based on OPR guidance

Notes: 1. Quantitative thresholds will be updated as required with subsequent updates to the City Travel Demand Model and/or per revisions to CEQA Guidelines or OPR Technical Advisory on VMT analysis.

Project Level VMT Assessment

Michael Baker enlisted the assistance of Translutions, Inc. to conduct project specific travel demand modeling for the Project using the City's Travel Demand Model (SLO TDM). The model was provided by the City for use on this project in August 2020. The modeling and calculations were conducted consistent to the methodology included in *Appendix B: SLO TDM Technical Guide - Calculating VMT (Cambridge Systematics)* of the *City of San Luis Obispo Multimodal Transportation Impact Study Guidelines, 2nd Edition* (June 2020). The modeling summary files are provided with the transmission of this memorandum.

The Baseline (Year 2016) travel demand model results are shown in **Table 5** and a summary of the findings are shown in **Table 6**. The results show that the Project related work VMT per employee of 19.09 is greater than the significance threshold (12.45 work VMT/Employee), and is 130.3% of the Average Regional VMT (14.65 work VMT per employee) therefore **the project is anticipated to result in a significant transportation impact.**

Table 5: Project VMT Model Results

Category	No Project	With Project	Project Related
Total Employees (City) based on TIA guidelines	42,794	--	--
Total HBW Attractions (City)	80,735	--	--
Conversion Factor	0.53	--	--
HBW Attractions (Project TAZ)	1,823	2,065	241
Estimated Employees (Project TAZ)	966	1,094	128
HBW VMT (Project TAZ)	18,270	20,714	2,444
VMT/Employee (Project TAZ)	18.90	18.93	**19.09**
VMT/Employee (Regional Average)	14.65	14.65	**14.65**
Percent of Regional Average VMT	129.0%	129.2%	**130.3%**

Notes: HBW = Home based work

Table 6: Project VMT Impact Summary

Category	VMT Summary
VMT/Employee (Project TAZ)	19.09
VMT/Employee (Regional Average)	14.65
VMT/Employee Threshold (15% Below Regional Average)	12.45
Percentage of Regional Average VMT	**130.3%**
Percentage Reduction in VMT Required to Shift Project to Below Threshold [(19.09 – 12.45)/19.09]	**34.8%**

Mitigation Measures

With the finding of a significant transportation impact, potential mitigation measures are evaluated under this section. To mitigate the impact, the project would need to identify Transportation Demand Management (TDM) elements to help reduce reliance on auto or provide means by which to either reduce the length of vehicle trips or reduce the number of vehicle trips. **Attachment 1** contains a list of potential VMT mitigation measures developed for the Los Angeles County Metropolitan Transportation Authority (Metro) which have potential applicability to various land use and transportation projects. The mitigation measures and their potential impact evaluated in this analysis are based on the California Air Pollution Control Officers Association (CAPCOA) *Quantifying Greenhouse Gas Mitigation Measures* (August 2010). The list of TDM strategies that are relevant to development projects and evaluated in terms of the Aerovista project are shown in **Table 7**. Each of the TDM strategies were evaluated in terms of its potential applicability to the proposed Project in an attempt to mitigate the VMT impact identified. **Table 8** summarizes the mitigation strategy impacts. Other measures such as increasing diversity of land use, changing the land use mix, and relocating the project may be considered by the Project applicant if deemed appropriate.

Table 7: Evaluation of Potential TDM Strategies

TDM Strategy		Evaluation	CAPCOA Code	Applicability to the Proposed Project
1	Provide commute trip reduction programs	**Implementing commute trip reduction programs is projected to result in a 1% - 6.2% VMT reduction.** This includes implementation of voluntary strategies including carpooling encouragement, ride-matching assistance, preferential carpool parking, flexible work schedules for carpools, half time transportation coordinator, vanpool assistance, and bicycle end-trip facilities.	TRT-1 (Includes TRT-3 through TRT-9)	Applicable – A 6.2% reduction is anticipated with full implementation
2	Provide parking or roadway pricing or cash-out programs	**Providing employee parking cash-out programs is anticipated to result 0.6% - 7.7% commute VMT reduction.** This strategy allows the employer to provide employees with a choice of forgoing subsidized/free parking for a cash payment equivalent to the cost of the parking space.	TRT-15	Applicable – A 3.5% reduction in VMT is projected if implemented
3	Provide pedestrian network improvements	**Orienting the project towards transit, bicycle, and pedestrian facilities could result in a 0.25% - 0.50% reduction in VMT.** Sidewalks currently existing along Aerovista Place and Broad Street. Additionally, bicycle lanes existing along Broad Street. Aerovista Place is classified as a local roadway and is able to accommodate bicycle traffic within the general travel lanes.	SDT-1	Applicable – A 0.25% reduction is anticipated given that existing sidewalk access is provided
4	Provide bicycle parking in non-residential projects	**Providing bicycle parking is anticipated to result in a 0.625% reduction in VMT for non-residential projects.** It is recommended that the project provide dedicated bicycle parking on-site.	SDT-6	Applicable – A 0.625% reduction in VMT if provided
5	Locate project near transit / increase transit accessibility	**Locating a project near transit is anticipated to result in a 0.5% - 24.6% VMT reduction.** Transit service is provided along Broad Street by SLO Transit via Route 1A/1B. Service is generally provided on the hour.	LUT-5	Applicable – A 5% reduction in VMT is anticipated due to the proximity to existing transit service
6	Increase transit service frequency and speed	**Increasing transit service frequency/speed is projected to result in a 0.02% - 2.5% reduction in VMT.** This type of measure requires regional or local agency implementation and coordination to provide transit beyond what is currently available and thus it is not applicable for individual development projects.	TST-4	Not Applicable

Table 8: Mitigation Summary

Category			VMT Summary
Percentage Reduction in VMT Required to Shift Project to Below Threshold			-34.8%
Mitigation Impact	1	Provide commute trip reduction programs	-6.2%
	2	Provide parking or roadway pricing or cash-out programs	-3.5%
	3	Provide pedestrian network improvements	-0.25%
	4	Provide bicycle parking in non-residential projects	-0.625%
	5	Locate project near transit / increase transit accessibility	-5.0%
	Total Impact		***-15.575%***
Finding: VMT reduction impact does not achieve the required 34.8% reduction in VMT/employee.			

An alternative to TDM programs is the establishment of mitigation fee programs and mitigation banks/exchanges for projects that are unable to fully mitigate their VMT impacts. These programs would fund a pool of projects that would improve VMT at a regional level. However, VMT fee programs and mitigation banks have not yet been implemented and are currently not a mitigation option for this project. Additionally, OPR has also identified other non-project specific off-site strategies to reduce VMT which include providing or improving access and/or quality of bicycle and pedestrian infrastructure, increasing transit service frequency, improving transit stop access, and improving transit station amenities. **Based on the TDM evaluation, the project is unable to mitigate the VMT impacts through TDM alone, and thus the transportation impact is identified as significant and unmitigated unless further VMT mitigation strategies are implemented.**

Conclusions

The VMT evaluation of the proposed general office and medical office building at 862 Aerovista Place located in the City of San Luis Obispo shows that the Project does not meet the screening criteria and thus a VMT assessment was required. Evaluation of the project TAZ and regional TAZ average VMT per employee demonstrated that the Project does not meet the VMT threshold of 85% of the average regional VMT per employee. As such, the Project will result in a significant transportation impact. Mitigation strategies involving TDM alone are unable to satisfy the required change in VMT to meet the threshold. **Therefore, the project's transportation impact has been identified as significant and unmitigated without further mitigation beyond TDM alone.**

Attachment 1 – Potential VMT Mitigation Measures

Reduction Measure	Implementation Lead	Effectiveness	Source	Scale/Magnitude
Orient the project toward transit, bicycle, and pedestrian facilities.	Applicant	0.25 – 0.5% reduction in VMT	CAPCOA page 179, LUT-7	Within Project
Locate the project in an area of the region that already exhibits low VMT	Applicant	10-65% VMT reduction	CAPCOA page 159, LUT-2	Site specific
Shifting single occupancy vehicle trips to carpooling or vanpooling, for example providing ride-matching services	Employer	0.3 – 13.4% commute VMT reduction	CAPCOA page 227, TRT-3	Based on size of development
Limit or eliminate parking supply	Applicant	5 – 12.5% vehicle miles travelled (VMT) reduction	CAPCOA page 207, PDT-1	Within Project
Unbundle parking costs	Applicant	2.6 – 13% VMT reduction	CAPCOA page 210, PDT-2	Within Project
Provide parking or roadway pricing or cash-out programs	Applicant/ landlord / company	0.1 – 19.7% commute VMT reduction, cash- out: 0.6 – 7.7% commute VMT reduction	CAPCOA page 261, TRT-14 and 15	Varies, potentially high
Provide Bike Parking in Non-Residential Projects	Applicant	0.625% reduction in VMT	CAPCOA page 202, SDT-6	Within Project
Provide Bike Parking with Multi-Unit Residential Projects	Applicant	Not Quantified	CAPCOA page 204, SDT-7	Within Project
Incorporate affordable housing into the project	Applicant	Not Quantified		Within Project
Locate the project near transit.	Applicant	0.5 – 24.6% VMT reduction	CAPCOA page 171, LUT-5	Site specific
Increase project density	Applicant	0.8 – 30.0% VMT reduction	CAPCOA page 155, LUT-1	Within Project
Increase the mix of uses within the project or within the project's surroundings	Applicant	9-30% VMT reduction	CAPCOA page 162, LUT-3	Within Project
Increase connectivity and/or intersection density on the project site and	Applicant	Not Quantified		Within Project
Integrate Affordable and Below Market Rate Housing	Applicant	0.04 – 1.20% VMT reduction	CAPCOA page 176, LUT-6	Within Project
Locate Project near Bike Path/Bike Lane	Applicant	0.625% reduction in VMT	CAPCOA page 181, LUT-8	Site specific
Incorporate Bike Lane Street Design (on-site)	Applicant	1% increase in share of workers commuting by bicycle (for each additional mile of bike lanes per square mile)	CAPCOA page 200, SDT-5	Within Project
Increase access to common goods and services, such as groceries, schools, and daycare	Local Agency	2% Trip Reduction		Based on location
Implement or provide access to a commute reduction program	Applicant/ landlord / company	1.0 – 6.2% commute VMT Reduction	CAPCOA page 210, TRT-1	
Providing on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, and showers and locker rooms	Applicant/ landlord / company	Not quantified	CAPCOA page 244, TRT-8	
Implement Commute Trip Reduction Marketing	Applicant/ landlord / company	4-5% commute vehicle trips reduced with full- scale employer support	CAPCOA page 240, TRT-7	Within Project
Tolling new lanes to encourage carpools and fund transit improvements	Caltrans	Strong effect on travel patterns		Very large scale undertaking
Converting existing general purpose lanes to HOV or HOT lanes	Caltrans	Tolling effect		Very large scale undertaking

Reduction Measure	Implementation Lead	Effectiveness	Source	Scale/Magnitude
Implementing Intelligent Transportation Systems (ITS) strategies to improve passenger throughput on existing lanes.	Caltrans, Local Agency, LA County DPW	0 - 45% reduction in GHG emissions	CAPCOA page 291, RPT-2	High dependent on affected roadways
Implement Commute Trip Reduction Program – Required Implementation/Monitoring	Employer	4.2 – 21.0% commute VMT reduction	CAPCOA page 223, TRT-2	Within Project
Provide transit passes. [to Metro services]	Employer	Not quantified		
Providing telework options	Employer	0.07 – 5.50% commute VMT	CAPCOA page 236, TRT-6	Low scale
Providing employee transportation coordinators at employment sites and	Employer	Not Quantified		Within Project
Providing a guaranteed ride home service to users of non-auto modes.	Employer	Not Quantified		Within Project
Provide car-sharing, bike sharing, and ride-sharing programs	Employer or franchise through local agency	1 – 15% commute VMT reduction	CAPCOA page 253, TRT-11 and TRT-12	
Implement Car-Sharing Program	Employer or franchise through local agency	0.4 – 0.7% VMT reduction and therefore 0.4 – 0.7% reduction in GHG emissions	CAPCOA page 245, TRT-9	Likely beyond the site area to be effective
Increase access to common goods and services, such as groceries, schools, and daycare	Local Agency	2% Trip Reduction		Based on location
Incorporate neighborhood electric vehicle network	Local Agency	0.5-12.7% VMT reduction	CAPCOA page 194, SDT-3	Potentially very large scale to be effective
Provide Pedestrian Network Improvements	Local Agency	0 - 2% VMT reduction	CAPCOA page 186, SDT-1	Dependent on affected area
Provide traffic calming	Local Agency	0.25 – 1.00% VMT reduction and therefore 0.25 – 1.00% reduction in GHG emissions	CAPCOA page 190, SDT-2	Generally low, and localized
Implement Market Price Public Parking (On-Street)	Local Agency	2.8 – 5.5% VMT reduction	CAPCOA page 213, PDT-3	Likely on adjacent roadways
Reduction Measures on a Programmatic Level				
Expand Transit Network	Metro and other Transit Agencies	0.1 – 8.2% vehicle miles travelled (VMT) reduction	CAPCOA page 276, TST-3	Very High
Increase Transit Service Frequency/Speed	Metro and other Transit Agencies	0.02 – 2.5% VMT reduction	CAPCOA page 280, TST-4	Purchase of new vehicles or more vehicles run
Provide a Bus Rapid Transit System	Metro and other Transit Agencies	0.02 – 3.2% VMT reduction	CAPCOA page 270, TST-1	High, if new system
Providing incentives or subsidies that increase the use of modes other than single-occupancy vehicle.	Metro and other Agencies	0.3 – 20.0% commute VMT reduction	CAPCOA page 230, TRT-4	
Improve or increase access to transit.	Local Agency in coordination with Metro	Not quantified	CAPCOA page 275, TST-2	Small investments in pedestrian and bicycle connections, may include park and ride improvements
Implementing or funding off-site travel demand management	Various including Metro	Not Quantified		Variable
Increase Destination Accessibility	Metro and other Transport. Agencies	6.7 – 20% VMT reduction	CAPCOA page 167, LUT-4	Site specific
Deploy management strategies (e.g., pricing, vehicle occupancy requirements) on roadways or roadway lanes.	Local Agency	Not Quantified		Likely on adjacent roadways
Create Urban Non-Motorized Zones	Local Agency	0.01 – 0.2% annual VMT reduction		Likely on adjacent roadways

Source: *Analysis of VMT Mitigation Measures Pursuant to SB 743* (February 23, 2018, Prepared by Iteris, Inc. for Metro)