

WRCOG SB 743 Implementation Pathway Document Package



FEHR & PEERS

March 2019

Table of Contents

EXECUTIVE SUMMARY	3
--------------------------	----------

DOCUMENTS

1. Methodology	7
Baseline VMT Methodology and Data	8
Tools Assessment	37
VMT Impact Analysis Methodologies and Case Studies.....	48
2. Thresholds	58
Thresholds Assessment	59
3. Mitigation	85
TDM Strategies Evaluation.....	86
Mitigation Programs.....	119



Executive Summary

This executive summary is intended to provide a brief introduction of the WRCOG SB 743 Implementation Pathway project and summarizes the work and findings of the technical working papers completed to date.

The working papers are included in sections following this Executive Summary.

Introduction

Senate Bill (SB) 743 changes how transportation impacts are measured under the California Environmental Quality Act (CEQA) from using vehicle level of service (LOS) to using vehicle miles traveled (VMT). This change is intended to capture the impacts of driving on the environment compared to the impact on drivers. Concerns about the impact of projects on drivers through the use of LOS or other delay metrics may still occur as part of land use entitlement reviews but LOS will no longer be allowed as a basis for transportation impacts under CEQA. To implement SB 743, lead agencies will need to determine appropriate VMT methodologies, thresholds, and feasible mitigation measures. The purpose of this project is to help WRCOG member agencies understand the specific questions that need to be addressed when making these determinations and to provide research, analysis, and other evidence to support their final SB 743 implementation decisions. WRCOG chose to lead this effort to help reduce the SB 743 implementation costs that would have otherwise occurred by individual agencies pursuing independent implementation efforts.

The project team has prepared seven working papers to date for this project. Each working paper addressed the following key issues that each jurisdiction must address when conducting VMT assessment.

1. Methodology – what methodology should be used to forecast ‘projected generated VMT’ and the ‘project’s effect on VMT’ under baseline and cumulative conditions and how does the selection of a threshold influence the methodology decision?
2. Thresholds – what threshold options are available to each jurisdiction and what substantial evidence exists to support the selecting a specific VMT threshold?
3. Mitigation – what would constitute feasible mitigation measures for a VMT impact given the land use and transportation context of the WRCOG region?

Below is a summary of each of the working papers. The complete working papers are also included in this document.

Methodology

Baseline VMT Methodology and Data

Base Year (2012) total VMT per service population (i.e., population plus employment), home-based VMT per capita, and home-based work VMT per worker were calculated using outputs from the Southern California Association of Governments (SCAG) Regional Transportation Plan travel forecasting model and the Riverside County Transportation Analysis Model (RIVTAM). In addition, data from the California Household Travel Survey (CHTS) was used to compare model derived estimates of Home-Based VMT with those based on survey observations. VMT results and comparisons of results from different data sources were displayed graphically to aid in determining the appropriate VMT metric and data source for calculating VMT for use in the WRCOG region.

Tools Assessment

The capabilities of travel forecasting models along with 11 sketch model tools were reviewed to determine their strengths and weaknesses in generating appropriate VMT results for SB 743 analysis and testing VMT mitigation strategies. The travel forecasting model review resulted in the RIVTAM model being recommended for VMT impact analysis in the WRCOG region. For thresholds that are based on an efficiency form of VMT, a customized forecasting and screening tool was also recommended, which would use RIVTAM model inputs and outputs. This tool would be utilized to provide an initial screening of potential VMT impacts for projects and provide evidence to support presumptions of less than significant impact findings. The sketch model tools were determined to be most appropriate for testing VMT mitigation, with CalEEMod, GreenTRIP Connect, and TDM+ being the most effective. Since these tools rely on TDM strategies to reduce VMT, an important limitation was highlighted that many of these strategies are dependent on building tenants, which can change over time. Hence, relying TDM programs tied to tenants would likely result in the need for on-going monitoring to verify performance.

VMT Impact Analysis Methodologies and Case Studies

Recommended SB 743 VMT analysis methodologies for screening and for full impact analysis were presented. Project threshold analysis methodologies were tested on land use project case studies to determine how impact analysis outcomes may vary depending on the methodology chosen. The case studies were projects of varying types: commercial/retail, logistics, single family development, and transit-oriented development. Analysis methodologies for land use plans, transportation projects, and cumulative analysis were also described.

Thresholds

Thresholds Assessment

Potential VMT thresholds were assessed within the context of the objectives of SB 743, legal opinions related to the legislation, proposed CEQA Guidelines updates, and the technical advisory produced by OPR. Fehr & Peers identified four threshold options for consideration by lead agencies.

1. Thresholds consistent with OPR's Technical Advisory, recommending that proposed developments generate VMT per person that is 15% below existing VMT per capita,
2. Thresholds consistent with Lead Agency air quality, GHG reduction, and energy conservation goals,
3. Thresholds consistent with RTP/SCS future year VMT projects by jurisdiction or sub-region, and
4. Thresholds based on baseline VMT performance by jurisdiction or sub-region.

Mitigation

TDM Strategies Evaluation

Transportation demand management (TDM) strategies and their effectiveness for reducing VMT were reviewed and assessed for their relevancy in the WRCOG region. Given the region's rural/suburban land use context, the following key strategies were identified as the most appropriate.

- diversifying land use
- improving pedestrian networks
- implementing traffic calming infrastructure
- building low-street bicycle network improvements
- encouraging telecommuting and alternative work schedules
- providing ride-share programs

Mitigation Programs

Due to limitations of project-by-project approaches to reducing VMT, an evaluation of larger mitigation programs was conducted. The evaluation considered existing programs such as the WRCOG transportation uniform mitigation fee (TUMF) program and new mitigation program concepts. While the TUMF funds a variety of projects including those that would contribute to VMT reduction, the overall effect of the program results in an increase in VMT due to substantial roadway capacity expansion. The TUMF could be modified to separate the VMT reducing projects into a separate impact fee program based on a VMT reduction nexus, but it could not be relied upon for VMT mitigation in its current form. New program concepts included VMT mitigation banks and exchanges. These are innovative concepts that have not yet been developed and tested but are being considered in areas where limited mitigation options would otherwise exist.



1. Methodology



Baseline VMT Methodology and Data

TECHNICAL MEMORANDUM

Date: 10.22.18
To: Chris Gray (WRCOG), Chris Tzeng (WRCOG), Sarah Dominguez (SCAG), Mike Gainor (SCAG)
From: Ronald T. Milam, AICP, PTP and Andrew Scher
Subject: SB 743 Implementation Baseline VMT Methodology and Data OC18-0567

This technical memorandum summarizes the baseline VMT methodology and associated data prepared for the WRCOG jurisdictions as part of the SB 743 Implementation Pathway project. Baseline methodology options included the regional SCAG model, the RIVTAM model, and 2010-2012 California Household Travel Survey (CHTS). A key limitation of the two models is that they exclude the VMT associated with internal to external and external to internal trips. For the SCAG and RIVTAM models, the VMT methodology included internal to internal trips for each of the following variable formats.

- Total VMT (all vehicles and all trip purposes)
- Home-based VMT per capita (automobile only)
- Home-based work VMT per worker (automobile only)

The exception to this is the RIVTAM Total VMT, which included internal to external and external to internal trips. The model limited all trip length calculations for these trips to facilities within the SCAG region; therefore, the lengths of these trips are not fully accounted for.

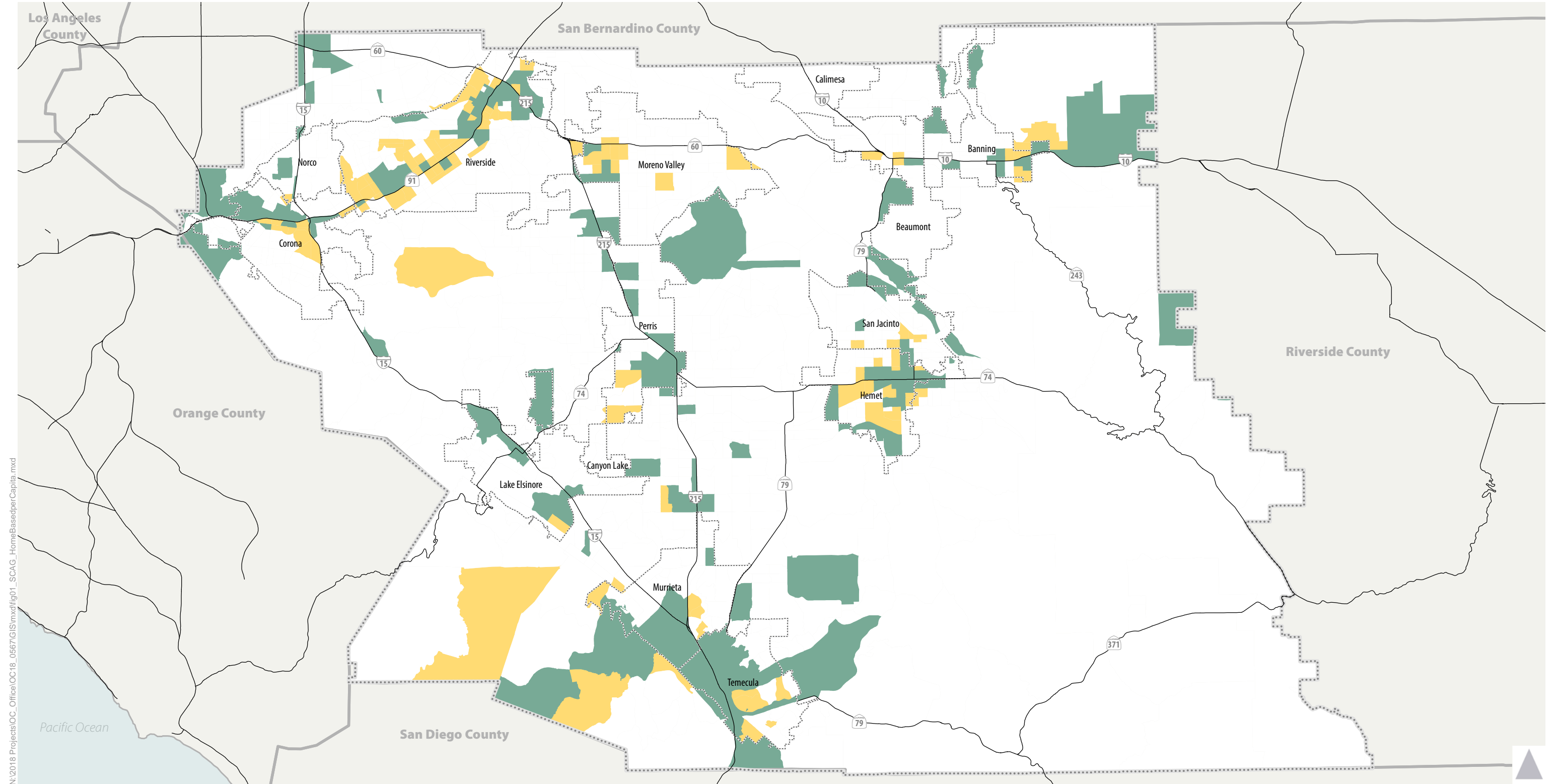
The CHTS data was included for purposes of comparing home-based generated VMT from the two models although it can also be considered a separate methodology since it provides direct VMT generation rates for residential households.

Attachment A contains the 2012 VMT by jurisdiction from the SCAG model in chart and map format while Attachment B contains the same information from the RIVTAM model. For the RIVTAM model, we've also included total VMT data by TUMF district. Attachment C contains comparisons of the SCAG and RIVTAM model results for 2012 conditions.

Baseline conditions for CEQA purposes would be specific to the release date of a project's notice of preparation (NOP). Hence, the project team recommends interpolating between the 2012 and 2040 VMT data to establish specific VMT values associated with a baseline year. Spreadsheets containing the 2012 and 2040 data, and where interpolation calculations can be performed, will be transmitted separately to

WRCOG. Attachment D contains the CHTS VMT data for those jurisdictions in WRCOG where adequate sample sizes were available.

ATTACHMENT A – SCAG VMT Data



- < -15% below SCAG Regional Average *
- 0 to -15% below SCAG Regional Average
- Higher than SCAG Regional Average
- WRCOG Boundary
- County Boundary
- City Limits

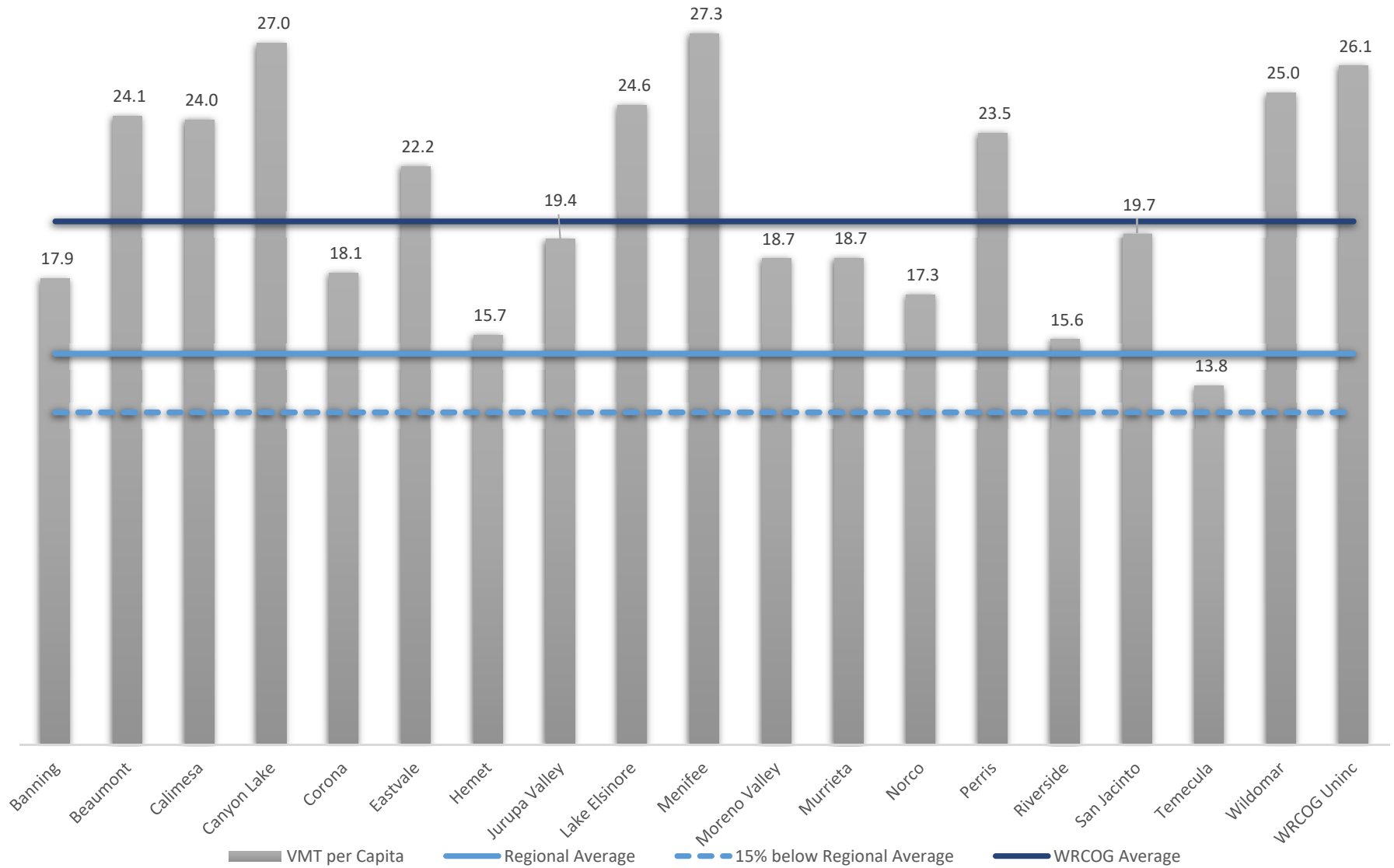
* SCAG Regional Average calculated using SCAG Model.

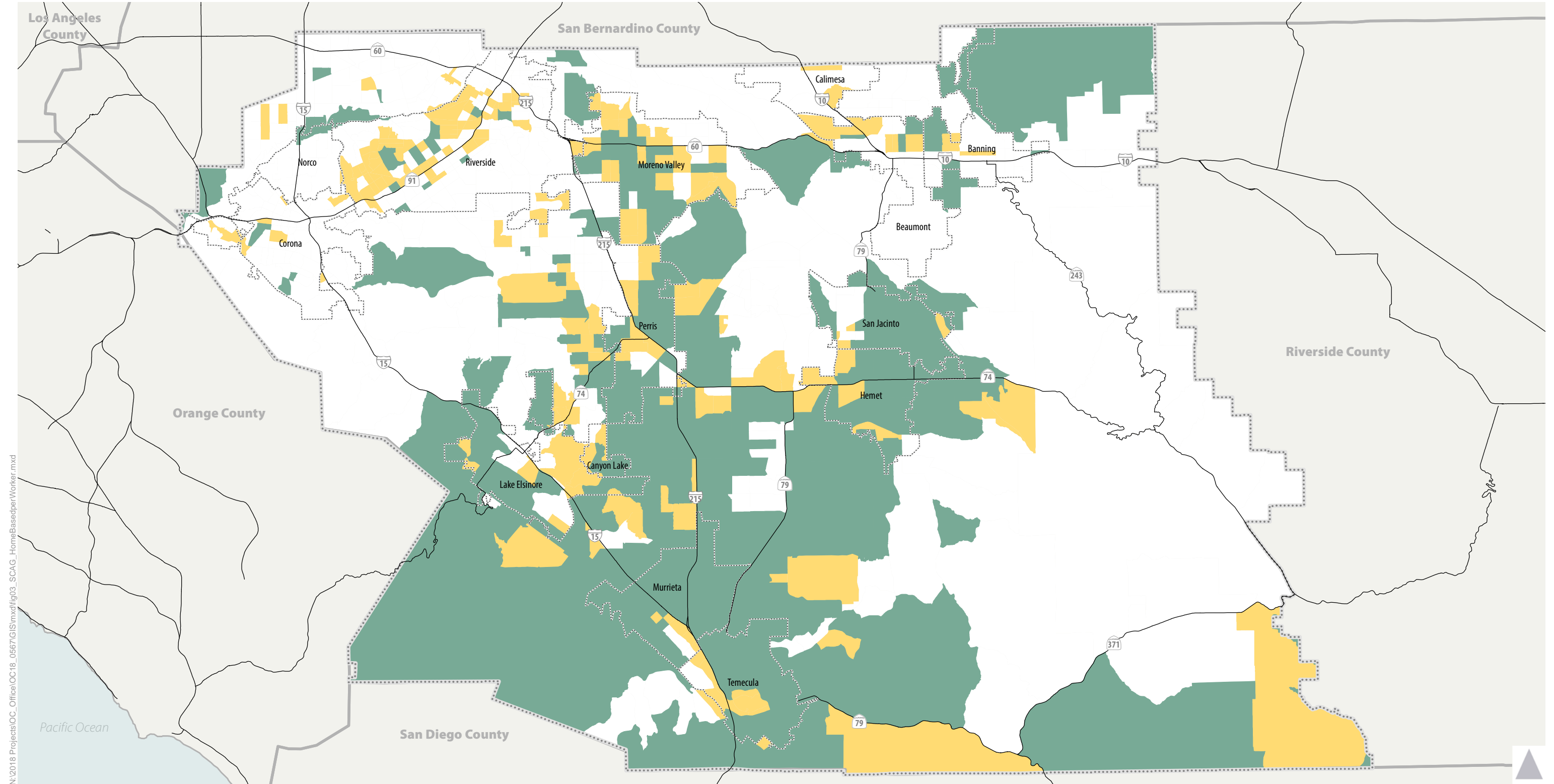
Figure 1



SCAG Model (2012)
Daily Residential Home Based VMT per Capita
Comparison to SCAG Regional Average

SCAG Model (2012) Daily Residential Home Based VMT per Capita





N:\2018 Projects\OC_Office\OC18_0567\GIS\mxd\fig03_SCAG_HomeBasedperWorker.mxd

- < -15% below SCAG Regional Average *
- 0 to -15% below SCAG Regional Average
- Higher than SCAG Regional Average
- WRCOG Boundary
- County Boundary
- City Limits

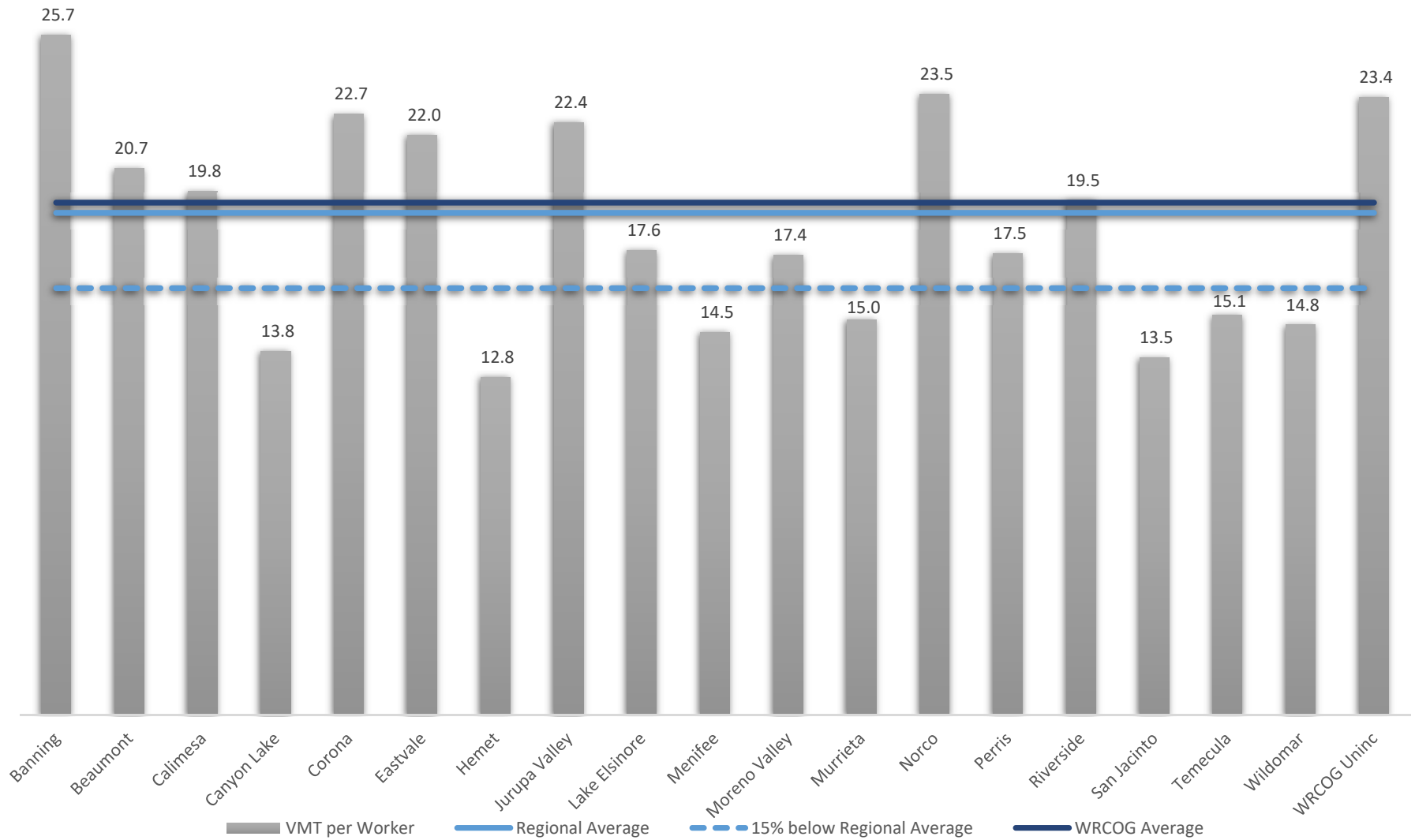
* SCAG Regional Average calculated using SCAG Model.

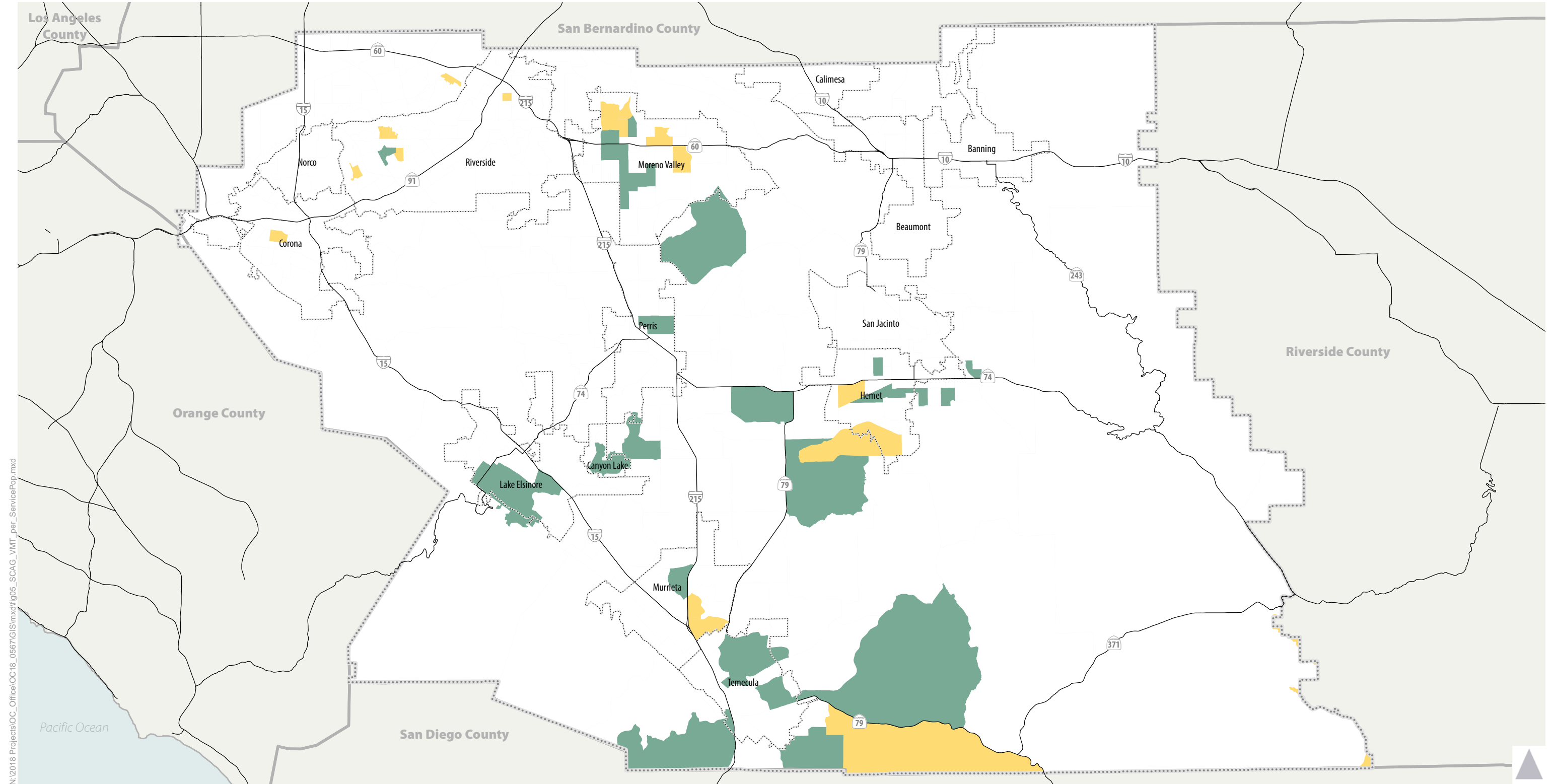
Figure 3



SCAG Model (2012)
Daily Home Based Work VMT per Worker
Comparison to SCAG Regional Average

SCAG Model (2012) Daily Home Based Work VMT per Worker





N:\2018 Projects\OC_Office\OC18_0567\GIS\mxd\fig05_SCAG_VMT_per_ServicePop.mxd

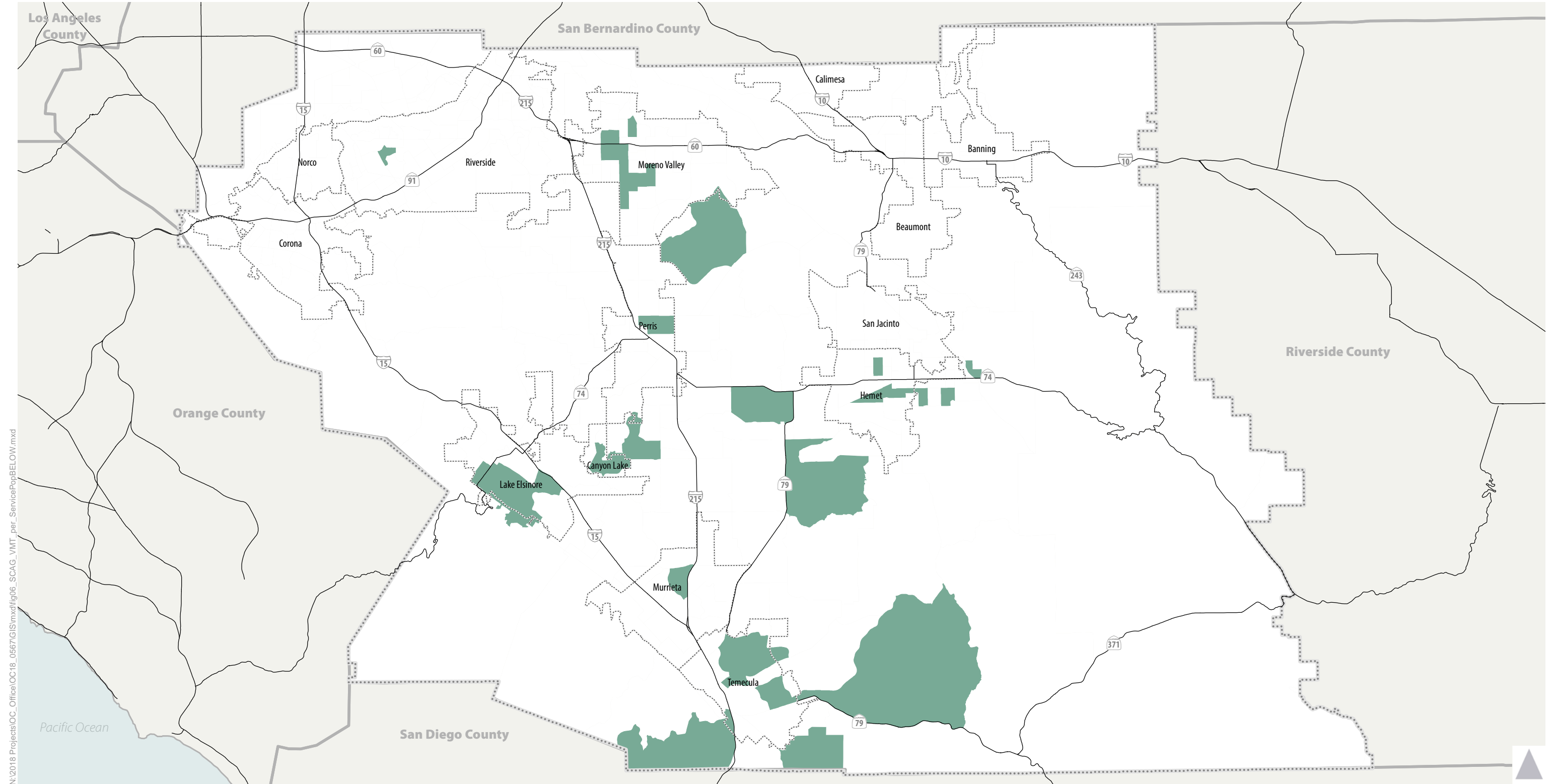
- < -15% below SCAG Regional Average *
- 0 to -15% below SCAG Regional Average
- Higher than SCAG Regional Average
- WRCOG Boundary
- County Boundary
- City Limits

* SCAG Regional Average calculated using SCAG Model.

Figure 5



SCAG Model (2012)
Daily Total VMT per Service Population
Comparison to SCAG Regional Average



N:\2018 Projects\OC_Office\OC18_0567\GIS\mxd\fig06_SCAG_VMT_per_ServicePopBELOW.mxd

- < -15% below SCAG Regional Average *
 - Higher than SCAG Regional Average
 - WRCOG Boundary
 - County Boundary
 - City Limits
- * SCAG Regional Average calculated using SCAG Model.

Figure 6



SCAG Model (2012)
TAZs Performing Better than 15% below SCAG Regional Average of
Daily VMT per Service Population in only the SCAG Model

SCAG Model (2012) Daily Total VMT per Service Population

