



Western Riverside Council of Governments Administration & Finance Committee

AGENDA

**Wednesday, March 13, 2019
12:00 p.m.**

**Western Riverside Council of Governments
Citrus Tower
3390 University Avenue, Suite 450
Riverside, CA 92501**

In compliance with the Americans with Disabilities Act and Government Code Section 54954.2, if special assistance is needed to participate in the Administration & Finance Committee meeting, please contact WRCOG at (951) 405-6703. Notification of at least 48 hours prior to meeting time will assist staff in assuring that reasonable arrangements can be made to provide accessibility at the meeting. In compliance with Government Code Section 54957.5, agenda materials distributed within 72 hours prior to the meeting which are public records relating to an open session agenda item will be available for inspection by members of the public prior to the meeting at 3390 University Avenue, Suite 450, Riverside, CA, 92501.

The Administration & Finance Committee may take any action on any item listed on the agenda, regardless of the Requested Action.

1. CALL TO ORDER (Chuck Washington, Chair)

2. PUBLIC COMMENTS

At this time members of the public can address the Administration & Finance Committee regarding any items listed on this agenda. Members of the public will have an opportunity to speak on agenda items at the time the item is called for discussion. No action may be taken on items not listed on the agenda unless authorized by law. Whenever possible, lengthy testimony should be presented to the Committee in writing and only pertinent points presented orally.

3. MINUTES

A. Summary Minutes from the February 13, 2019, Administration & Finance Committee Meeting are Available for Consideration. P. 1

Requested Action: 1. *Approve the Summary Minutes from the February 13, 2019, Administration & Finance Committee meeting.*

4. CONSENT CALENDAR

All items listed under the Consent Calendar are considered to be routine and may be enacted by one motion. Prior to the motion to consider any action by the Committee, any public comments on any of the Consent Items will be heard. There will be no separate action unless members of the Committee request specific items be removed from the Consent Calendar.

A. Finance Department Activities Update P. 7

Requested Action: 1. Receive and file.

B. TUMF Collection Process Revision Update P. 13

Requested Action: 1. Receive and file.

5. REPORTS / DISCUSSION

A. PACE Programs Activities Update: General Activities Update P. 19

Requested Actions: 1. Recommend that the Executive Committee allow refinancing on Commercial PACE projects.
2. Recommend that the Executive Committee approve a 30-year Term for Commercial PACE Projects that have met certain conditions.

B. PACE Programs Financial Update P. 23

Requested Action: 1. Receive and file.

C. 28th Annual General Assembly & Leadership Conference: Nominations for Outstanding Community Service Award P. 27

Requested Action: 1. Receive and file.

D. Understanding the Transportation Analysis Implications of Senate Bill 743 P. 37

Requested Action: 1. Receive and file.

6. ITEMS FOR FUTURE AGENDAS *Members*

Members are invited to suggest additional items to be brought forward for discussion at future Administration & Finance Committee meetings.

7. GENERAL ANNOUNCEMENTS *Members*

Members are invited to announce items / activities which may be of general interest to the Administration & Finance Committee.

8. NEXT MEETING: The next Administration & Finance Committee meeting is scheduled for Wednesday, April 10, 2019, at 12:00 p.m., at WRCOG's office located at 3390 University Avenue, Suite 450, Riverside.

9. ADJOURNMENT

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**Administration & Finance Committee
February 13, 2019
Summary Minutes**

Item 3.A

1. CALL TO ORDER

The meeting of the Administration & Finance Committee (Committee) was called to order at 12:00 p.m. by Vice-Chair Bonnie Wright at WRCOG's Office, Citrus Conference Room.

Members present:

Mike Lara, City of Beaumont
Bonnie Wright, City of Hemet
Brian Tisdale, City of Lake Elsinore
Kelly Seyarto, City of Murrieta
Kevin Bash, City of Norco
Rita Rogers, City of Perris
Rusty Bailey, City of Riverside (12:07 p.m. arrival)
Ben Benoit, City of Wildomar
Karen Spiegel, County of Riverside, District 2 (12:05 p.m. arrival)
Brenda Dennstedt, Western Municipal Water District (12:19 p.m. arrival)

Staff present:

Steve DeBaun, Legal Counsel, Best Best & Krieger
Rick Bishop, Executive Director
Andrew Ruiz, Interim Chief Financial Officer
Christopher Gray, Director of Transportation & Planning
Casey Dailey, Director of Energy and Environmental Programs
Michael Wasgatt, Program Manager
Andrea Howard, Program Manager
Tyler Masters, Program Manager
Janis Leonard, Administrative Services Manager
Cynthia Mejia, Staff Analyst
Rachel Singer, Staff Analyst
Sofia Perez, Staff Analyst
Suzy Nelson, Administrative Assistant

Guests present:

Jeff Dunn, Best Best & Krieger
Mrunal Shaw, Best Best & Krieger
Terry Shea, RAMS
Louis Fernandez, RAMS
Todd Warden, South Coast Air Quality Management District

2. PUBLIC COMMENTS

There were no public comments.

8. CLOSED SESSION (Note: items were taken out of order)

There was no reportable action.

3. MINUTES – (Perris / Norco) 9 yes; 0 no; 0 abstention. Item 3.A was approved. The County District 3 and the Western Municipal Water District were not present.

A. Summary Minutes from the January 9, 2019, Administration & Finance Committee Meeting are Available for Consideration.

Action: 1. *Approved the Summary Minutes from the January 9, 2019, Administration & Finance Committee meeting.*

4. CONSENT CALENDAR – (Perris / Wildomar) 10 yes; 0 no; 0 abstention. Item 4.A was approved. The County District 3 was not present.

A. Finance Department Activities Update

Action: 1. *Received and filed.*

B. First Amendment to Professional Services Agreement with National CORE

Action: 1. *Approved the First Amendment to the Professional Services Agreement Amendment between the Western Riverside Council of Governments and National Community Renaissance of California for the provision of on-call professional services in an amount not to exceed \$60,000.*

C. Regional Streetlight Program Activities Update

Action: 1. *Received and filed.*

5. REPORTS / DISCUSSION

A. PACE Programs Activities Update: General Activities Update, Approval of Administrative Changes to the WRCOG Energy Efficiency and Water Conservation Program Administrative Guidelines and Program Report, and Addition of New Providers

Casey Dailey reported that staff recently toured the offices of Lever Energy Capital, a commercial PACE provider based out of Colorado. Lever has over a century of combined real estate finance and securitization experience in commercial real estate and clean energy financing and project development. If approved, Lever would have access to the WRCOG statewide footprint, and WRCOG would be the first bond issuer in California to Lever. Lever expects to complete \$25M in projects in 2019, and \$375M over the next five years.

Action: 1. *Recommended that the Executive Committee authorize the Executive Director to enter into contract negotiations and execute any necessary documents to include Lever Energy Capital under WRCOG's Commercial PACE umbrella.*

(Murrieta / Wildomar) 10 yes; 0 no; 0 abstention. Item 5.A was approved. The County District 3 was not present.

B. Appointment of a WRCOG Representative to a SCAG Policy Committee

Rick Bishop reported that today's presentation is for the final recommendation of a SCAG Policy Committee appointment. Per WRCOG policy, preference is given to an Executive Committee member.

Action: 1. *Recommended that the Executive Committee appoint Joseph Tessari, City of Eastvale, to the SCAG Community, Economic & Human Development Policy Committee for a term commencing March 1, 2019, ending December 31, 2020.*

(Norco / Perris) 10 yes; 0 no; 0 abstention. Item 5.B was approved. The County District 3 was not present.

C. Fiscal Year 2017/2018 Comprehensive Annual Financial Report (CAFR)

Andrew Ruiz introduced Terry Shea of RAMS, the auditing firm contracted to review WRCOG's financial statements.

Mr. Shea reported that RAMS staff conducted a detailed audit of financial records and inspected the relevant documentation; made inquiries regarding policies, procedures, and various transactions. Analytical procedures were performed, Executive Committee meeting minutes were reviewed, as well as various documents, contracts, and debt agreements.

RAMS found no disagreements with management; no material errors or irregularities; no significant accounting issues; and that new Governmental Accounting Standards Board Statement 75 measures were adopted during the year.

Action: 1. *Received and filed.*

D. 2nd Quarter Draft Budget Amendment for Fiscal Year 2018/2019

Andrew Ruiz reported that the 2nd Quarter Draft Budget Amendment includes an increase of \$7,040 in Administration expenditures due to a Workers Comp audit, and an increase of \$31,496 in interest revenues since switching investments to CAMP. In the Transportation & Planning Departments, consulting expenses increased by \$50,798; this will be offset by reimbursed grants. The Used Oil Program within the Environmental Department experienced an increase in materials by \$9,838, and will be offset by a decrease in advertising expenses.

Legal expenses surrounding the SAMAS Capital legal matter, as well as the WREP holiday light exchange and Streetlight Program loan origination fees totaled a \$28k increase; this will be offset by a reduction in expenditures in other categories.

PACE revenues for the WRCOG HERO Program were decreased by \$100k, and CA HERO revenues were decreased by \$750k. Other HERO revenues are being increased by \$149k; Greenworks PACE revenues were increased by \$4k; and PACE Funding revenues increased by \$20k. A total decrease in PACE revenues total \$675k, and will be offset by a reduction in consulting, salaries, and recording expenditures.

Casey Dailey reported that since 2016, PACE activity has declined, particularly in 2018. Staff surmises that the declines are at least in part due to competition from new PACE program providers throughout the state, and new legislation aimed at improving PACE through increased consumer protections. Staff have made several adjustments to ensure the budget remains balanced.

Vice-Chair Bonnie Wright asked if there has been any follow-up with Legislators in Washington, D.C., specifically Congressman Calvert.

Mr. Dailey responded that there has not.

Committee member Rusty Bailey asked about the status of reserve funds.

Mr. Ruiz responded that with the decline, staff has ensured there are sufficient reserves.

Rick Bishop added that overall, Agency reserves are at nearly \$5M. Staff are taking actions to adjust to the very sudden reduction in the residential market. There is a strong interest amongst commercial providers, which staff believes could increase revenues to some extent. Staff will continue to monitor and provide regular reports.

Committee member Brian Tisdale asked that staff return with details regarding where money is being spent. When the Program was initially created there was a steady revenue stream, which funded additional programs such as the Fellowship and BEYOND. How is this sudden decline going to impact these programs, and the Agency, into the next budget?

Mr. Ruiz responded that last fiscal year there was approximately \$900k in carryover revenues, and it is still anticipated that the budget will remain in the black, but only by a couple hundred thousand dollars.

Committee member Tisdale clarified that he is not asking about carryover revenues, but actual revenues.

Committee member Mike Lara asked what types of projects does PACE primarily fund.

Mr. Dailey responded that the majority of projects are solar, HVAC, doors, and windows.

Committee member Lara added that looking forward into next year, the state will be requiring mandatory solar on every new home and asked if the Program will expect an additional drop in revenues.

Mr. Bishop responded that with the new state mandate, there may be an opportunity for PACE to play a roll. Staff are investigating whether or not there are legislative opportunities to bring PACE to the fore front of that.

Action: 1. *Recommended that the Executive Committee approve the 2nd Quarter Draft Budget Amendment for Fiscal Year 2018/2019.*

(Wildomar / Perris) 10 yes; 0 no; 0 abstention. Item 5.D was approved. The County District 3 was not present.

E. 28th Annual General Assembly & Leadership Address Update

Cynthia Mejia reported that this year's event is scheduled for June 20, 2019, and will be held, for the first time, at the Pechanga Resort Casino in Temecula. The keynote speaker is Josh Earnest who served as President Barak Obama's Press Secretary from 2014 – 2017. After serving in the White House Mr. Earnest served as a political analyst for NBC and MSNBC and is currently the Senior Vice-President / Chief Communications Officer for United Airlines.

Action: 1. *Received and filed.*

6. ITEMS FOR FUTURE AGENDAS

There were no items for future agendas.

7. GENERAL ANNOUNCEMENTS

Rick Bishop announced that staff continue creating Podcasts on agency and member activities. An image of the dashboard of streetlights being retrofitted through WRCOG's Streetlights Program was shared. The Grant Writing Program continues to be very successful and has received a total of approximately \$15M in grant

funding for member jurisdictions. Lastly, announcements for the fourth round of the Fellowship Program are currently being released.

8. NEXT MEETING: The next meeting is scheduled for Wednesday, March 13, 2019, at 12:00 p.m., at WRCOG's office located at 3390 University Avenue, Suite 450, Riverside.

9. ADJOURNMENT: The meeting of the Administration & Finance Committee adjourned at 1:01 p.m.

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Western Riverside Council of Governments

Administration & Finance Committee

Staff Report

Subject: Finance Department Activities Update

Contact: Andrew Ruiz, Interim Chief Financial Officer, aruiz@wrcog.us, (951) 405-6741

Date: March 13, 2019

The purpose of this item is to provide an update on WRCOG's Annual TUMF review, and the Agency Financial Report summary through January 2019.

Requested Action:

1. Receive and File.

Annual TUMF Review of Participating Agencies

Each year, WRCOG meets with participating members to review TUMF Program fee collections and disbursements to ensure compliance with Program requirements. The FY 2017/2018 reviews began in November 2019.

Letters to each member agency regarding WRCOG's annual TUMF review have been distributed except to the Cities of Murrieta, Perris, and San Jacinto. Staff continues to review information provided by the City of Murrieta and expects to distribute a final letter by mid-March 2019. Staff has requested additional information from the City of Perris regarding potential TUMF credits awarded to development projects within a financing district. The City of San Jacinto has not submitted any information related to the annual review and staff is working with the City Manager to remedy any further delay in receiving the information. These annual TUMF review letters serve as the basis in determining whether a TUMF participating agency is in compliance with the Program.

Staff would note that annually, WRCOG distributes notification of TUMF Program compliance to the Riverside County Transportation Commission (RCTC). Without certification of TUMF Program compliance, a member agency could potentially jeopardize its share of Measure A funds through the Local Streets and Roads Program.

Financial Report Summary through January 2019

The Agency Financial Report summary through January 2019, a monthly overview of WRCOG's financial statements in the form of combined Agency revenues and costs, is provided as Attachment 1.

Prior Action:

None.

Fiscal Impact:

This item is for informational purposes only; therefore, there is no fiscal impact.

Attachment:

1. Financial Report summary – January 2019.

Item 4.A

Finance Department Activities Update

Attachment 1

Financial Report summary – January 2019

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**Western Riverside Council of Governments
Monthly Budget to Actuals
For the Month Ending January 31, 2019**

Total Agency			
	Approved Budget 6/30/2019	Thru Actual 1/31/2019	Remaining Budget 6/30/2019
Revenues			
Member Dues	311,410	311,410	-
PACE Residential Revenue	480,573	177,851	302,722
WRELP Phase 2 Revenue	86,750	75,123	11,627
Statewide HERO Revenue	1,650,000	754,790	895,210
Gas Co. Prtnrshp Revenue	86,676	56,941	29,735
PACE Commercial Revenue	29,078	30,844	(1,766)
WRCOG HERO-Recording Revenue	122,500	99,034	23,466
PACE Commercial Recording Revenue	2,500	445	2,055
Statewide Recording Revenue	600,000	474,445	125,555
Regional Streetlights Revenue	300,000	261,500	38,500
Solid Waste	107,313	122,378	(15,065)
Used Oil Grants	228,820	203,820	25,000
NW Clean Cities - Air Quality	132,500	118,000	14,500
LTF Revenue	675,000	775,500	(100,500)
General Assembly Revenue	300,000	1,300	298,700
Commerical/Service	110,645	31,190	79,455
Retail	130,094	69,724	60,370
Industrial	272,663	348,883	(76,220)
Residential/Multi/Single	1,144,551	642,305	502,246
Multi-Family	142,045	134,857	7,188
Interest Revenue - Other	31,496	80,066	(48,570)
HERO - Other Revenue	149,833	150,084	(251)
Commercial/Service - Non-Admin Portion	2,655,491	779,753	1,875,738
Retail - Non-Admin Portion	3,122,265	1,743,109	1,379,156
Industrial - Non-Admin Portion	6,543,923	8,722,068	(2,178,145)
Residential/Multi/Single - Non-Admin Portion	27,469,233	16,057,614	11,411,619
Multi-Family - Non-Admin Portion	3,409,088	3,371,432	37,656
FY 17/18 Carryover Funds Transfer in	945,845	945,845	-
Carryover Funds Transfer in	4,268,757	4,268,757	-
Overhead Transfer in	2,084,260	1,215,818	868,442
Total Revenues and Carryover Funds	58,937,742	42,293,271	16,010,264
Expenditures			
Wages and Benefits			
Salaries & Wages	2,874,645	1,469,747	1,404,898
Fringe Benefits	903,736	527,180	376,557
Overhead Allocation	2,084,260	1,215,818	868,442
Total Wages, Benefits and Overhead	6,001,857	3,212,745	2,649,896
General Legal Services	626,573	336,685	289,888
PERS Unfunded Liability	198,823	152,327	46,496
Audit Svcs - Professional Fees	27,500	25,480	2,020
Bank Fees	20,665	26,839	(6,174)

Commissioners Per Diem	62,500	38,400	24,100
Office Lease	400,000	255,362	144,638
WRCOG Auto Fuels Expenses	1,250	818	432
WRCOG Auto Maintenance Expense	84	84	-
Parking Validations	27,577	9,966	17,611
Staff Recognition	800	248	552
Coffee and Supplies	3,000	430	2,570
Event Support	136,732	117,088	19,644
Program/Office Supplies	24,017	11,940	12,077
Computer Equipment/Supplies	8,000	51	7,949
Computer Software	31,111	2,999	28,112
Rent/Lease Equipment	30,000	8,688	21,312
Membership Dues	33,000	20,797	12,203
Subscription/Publications	1,448	1,025	423
Meeting Support Services	9,821	1,723	8,098
Postage	6,108	2,694	3,414
Other Household Exp	975	354	621
COG HERO Share Expenses	15,000	3,444	11,556
Storage	16,000	3,812	12,188
Printing Services	4,777	1,670	3,107
Computer Hardware	14,100	2,664	11,436
Communications - Regular Phone	15,000	9,033	5,967
Communications - Cellular Phones	21,000	5,593	15,407
Communications - Computer Services	57,500	25,097	32,403
Communications - Web Site	8,000	6,932	1,068
Equipment Maintenance - General	10,000	4,450	5,550
Equipment Maintenance - Comp/Software	21,000	17,776	3,224
Insurance - Gen/Busi Liab/Auto	86,890	100,126	(13,236)
PACE Residential Recording	480,500	197,055	283,445
Seminars/Conferences	13,587	2,153	11,434
General Assembly Expenses	300,000	23,480	276,520
Travel - Mileage Reimbursement	23,688	7,712	15,976
Travel - Ground Transportation	4,948	2,076	2,872
Travel - Airfare	11,500	7,599	3,901
Lodging	9,390	6,875	2,515
Meals	7,305	2,661	4,644
Other Incidentals	9,775	5,461	4,314
Training	9,250	298	8,952
Supplies/Materials	33,020	3,541	29,479
Advertisement Radio & TV Ads	41,025	20,420	20,605
Consulting Labor	2,844,095	1,354,139	1,489,956
TUMF Project Reimbursement	38,000,000	21,217,512	16,782,488
BEYOND Program REIMB	2,799,015	394,725	2,404,290
Computer Equipment/Software	3,500	1,880	1,620
Misc Equipment Purchased	3,000	2,735	265
Total General Operations	47,676,204	24,444,917	22,774,485
Total Expenditures and Overhead	53,678,061	27,657,661	25,424,381



Western Riverside Council of Governments

Administration & Finance Committee

Staff Report

Subject: TUMF Collection Process Revision Update

Contact: Christopher Gray, Director of Transportation & Planning, cgray@wrcog.us, (951) 405-6710

Date: March 13, 2019

The purpose of this item is to provide an on the revision to the TUMF collection process which allows member agencies to delegate the calculation and collection responsibility to WRCOG.

Requested Action:

1. Receive and File.

TUMF Calculation and Collection Policy Revision

In October 2018, the Executive Committee approved an update to the TUMF calculation and collection process to allow an option for member agencies to shift the responsibility for TUMF calculation and collection to WRCOG. The option to delegate TUMF calculation and collection to WRCOG will only become effective for a member agency with action by the elected body of the agency to approve the TUMF Ordinance Amendment.

Since the action by the Executive Committee, staff has been coordinating with each agency regarding their delegation and the status of each agency's delegation is in Attachment 1 to the Staff Report. Of the 20 TUMF participating agencies, 16 have provided notification or acted to delegate the fee collection to WRCOG. Four TUMF participating agencies are not delegating the responsibility to WRCOG and staff has notified the agencies of additional expectations for monthly remittance reports and level of documentation required for WRCOG to verify TUMF assessments. The implementation of WRCOG collecting the TUMF is becoming effective on a rolling basis, as each agency needs to take formal action on the TUMF Ordinance Amendment.

With each TUMF participating agency that has approved the TUMF Ordinance Amendment, staff has scheduled kick-off meetings to discuss in more detail and answer any questions regarding the process that WRCOG will follow for the TUMF collection. During these kick-off meetings, staff reviews calculation request materials with agency staff, answers any questions, and works through any unique aspects of the particular agency. Staff expectation is that by July 1, 2019, WRCOG will be collecting TUMF for the 16 agencies that have delegated the collection responsibility to WRCOG.

WRCOG has the system in place to make collections electronically (through ACH) and in person (via check) and is also in the process of executing a Professional Services Agreement with a vendor to develop an online fee portal for TUMF payments. It is anticipated that the system will be operational beginning of the next Fiscal Year. Once the online portal is close to completion, staff will provide a presentation to the WRCOG Committee structure to provide a demonstration.

Staff would also note that in fall 2018, WRCOG developed a fee estimator tool for stakeholders to utilize. For developers that are only seeking TUMF estimates for budget purposes, they can make those estimates using the tool (<http://tools.pbid.com/wrcog/>).

Prior Action:

None.

Fiscal Impact:

This item is for informational purposes only; therefore, there is no fiscal impact.

Attachment:

1. TUMF Collection Revision Status.

Item 4.B

TUMF Collection Process Revision
Update

Attachment 1

TUMF Collection Revision Status

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Agency	Opt In	1st Ordinance Reading	Estimated Effective Date
County of Riverside	No		
Northwest			
Riverside	In	3/5/2019	5/1/2019
Corona	In	12/10/2018	3/1/2019
Norco	In	12/19/2018	4/1/2019
March JPA	In	2/13/2019	5/1/2019
Eastvale	In	11/14/2018	4/1/2019
Jurupa Valley	In	2/7/2019	5/1/2019
Southwest			
Canyon Lake	In	Early 2019	Summer 2019
Temecula	In	1/22/2019	4/1/2019
Lake Elsinore	No		
Murrieta	In	12/18/2018	4/1/2019
Wildomar	In	Early 2019	Spring/Summer 2019
Central			
Moreno Valley	In	2/19/2019	4/1/2019
Menifee	In	2/20/2019	5/1/2019
Perris	No		
Pass			
Banning	In	Early 2019	Spring/Summer 2019
Beaumont	No		
Calimesa	In	1/22/2019	5/1/2019
Hemet/SJ			
Hemet	In	2/26/2019	5/1/2019
San Jacinto	In	Early 2019	Spring/Summer 2019

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Western Riverside Council of Governments

Administration & Finance Committee

Staff Report

Subject: PACE Programs Activities Update: General Activities Update

Contact: Casey Dailey, Director of Energy & Environmental Programs, cdailey@wrcog.us, (951) 405-6720

Date: March 13, 2019

The purpose of this item is to provide information on rate changes, discuss refinancing Commercial Assessments and approving a 30-year term for Commercial New Construction Projects.

Requested Actions:

1. Recommend that the Executive Committee allow refinancing on Commercial PACE projects.
2. Recommend that the Executive Committee approve a 30-year Term for Commercial PACE Projects that have met certain conditions.

WRCOG's PACE Programs provide financing to property owners to implement energy saving, renewable energy, water conservation, and seismic strengthening improvements to their homes and businesses. Financing is paid back through a lien placed on the property tax bill. The Program was initiated in December 2011 and was expanded in 2014 to allow jurisdictions throughout the state to join WRCOG's Program and allow property owners in these jurisdictions to participate. WRCOG now offers HERO, CaliforniaFIRST, PACE Funding, and Ygrene as residential PACE providers and Greenworks, CleanFund, and Ygrene as commercial PACE providers.

Interest Rate Changes

Due to market conditions and the rising cost of capital, two of WRCOG's Residential Providers, PACE Funding Group (PFG) and Renovate America, have notified staff that their interest rates have changed to reflect the current markets. PACE providers working with WRCOG, like Renovate America and PFG, are required to provide notification anytime their standard interest rates change. For the providers that offer dealer fees, the Executive Committee has set a band of interest rates that the providers can adjust to meet market conditions. In the event the interest rates related to the dealer fees change beyond the band authorized, providers are required to obtain approval from the Executive Committee. The changes shown here only relate to standard interest rates and, therefore, do not require WRCOG approval.

	Renovate		PFG	
	Previous	New	Previous	New
5 Years	6.75%	7.75%	6.75%	7.49%
10 Years	7.69%	8.69%	7.59%	8.29%
15 Years	8.15%	8.99%	7.89%	8.59%
20 Years	8.35%	8.99%	7.99%	8.69%
25 Years	8.35%	8.99%	8.19%	8.79%

Commercial PACE Refinancing

Staff have been approached by WRCOG’s Commercial PACE providers to consider refinancing of improvements that would have been eligible for PACE financing. As originally enacted Chapter 29 of the Improvement Act of 1911 (“Chapter 29”), the enabling legislation authorizing the establishment of the WRCOG residential and commercial PACE programs, only permitted the “financing” of eligible improvements. Effective January 1, 2017, Chapter 29 was amended to provide that all references to “financing” in Chapter 29 shall also be deemed to refer to “refinancing,” except that with respect to refinancing, the Executive Committee shall be required to conclude that providing refinancing will result in an increased adoption of improvements authorized to be financed by Chapter 29. While statutorily refinancing is now authorized pursuant to Chapter 29, the Executive Committee has not yet authorized refinancing and the Program Reports for the WRCOG PACE Program and the California PACE Program do not currently allow for it.

Following the amendment of Chapter 29 to authorize “refinancing”, other California Commercial PACE Programs allow program administrators to proceed with “lookback financing,” or refinancing of previously installed eligible improvements, under the theory that the longer term, lower interest, and lower yearly payments would benefit the commercial property owners capital structure and enable such property owners to finance additional eligible improvements.

The following chart shows some of the existing PACE Programs in California and other PACE Programs throughout the country that have authorized “lookback” refinancing:

California Programs:

CSCDA
CMFA
CEDA

Programs Outside California:

Pennsylvania (new program)
Michigan (Lean & Green)
Missouri (MCED)
Missouri (St. Louis County)
Florida (FRED)
Ohio (various programs)

Staff is requesting that this Committee recommend that the refinancing of improvements financed by PACE assessments and installed only on commercial properties be authorized so long as such refinancing results in documented savings to the property owner. Staff will work with BBK and the commercial PACE program administrators to establish additional refinancing requirements to be incorporated in the Program Reports such as the minimum level of such savings and the maximum term of such refinancing and any other requirements this Committee would recommend.

30-Year Commercial PACE Term

Currently, the maximum financing term allowed for Commercial Projects is 25 years, which is based on the useful life of the product. In an effort to conform to standard, senior financing terms of typical development projects, staff has been requested to add an option for a 30-year term for new construction projects. In conversations with PACE Program partners and some developers, Staff has determined that most senior construction financing loans contain a “replacement reserve contingency,” which is typically around 3% of the costs to replace any unforeseeable losses. Due to this, staff recommends proceeding with a 30-year term, if, in addition to lender consent, the owner can show evidence of a replacement reserve contingency.

Prior Action:

None.

Fiscal Impact:

This item is for informational purposes only; therefore, there is no fiscal impact.

Attachment:

None.

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Western Riverside Council of Governments

Administration & Finance Committee

Staff Report

Subject: PACE Programs Financial Update

Contact: Casey Dailey, Director of Energy and Environmental Programs, cdailey@wrcog.us, (951) 405-6720

Date: March 13, 2019

The purpose of this item is to provide an update on historical PACE activities and the various programs that additional PACE revenues have financed in the western Riverside region.

Requested Actions:

1. Receive and file.

WRCOG's PACE Programs provide financing to property owners to implement energy saving, renewable energy, water conservation, and seismic strengthening improvements to their homes and businesses. Financing is paid back through a lien placed on the property tax bill. The Program was initiated in December 2011 and was expanded in 2014 to allow jurisdictions throughout the state to join WRCOG's Program and allow property owners in these jurisdictions to participate. WRCOG now offers HERO, CaliforniaFIRST, PACE Funding, and Ygrene as residential PACE providers and Greenworks, CleanFund, and Ygrene as commercial PACE providers.

PACE Revenues

In 2011, WRCOG, in partnership with Renovate America, launched the HERO Program within the western Riverside subregion. In 2014, the effort expanded statewide (the California HERO Program), which is active in over 370 cities and 50 counties throughout the State. In 2016, the WRCOG Executive Committee authorized allowing additional PACE providers to operate within the WRCOG subregion; there are now three additional residential PACE providers that WRCOG has allowed to operate within the subregion: Renew Financial, PACE Funding Group and Ygrene.

In addition to addressing the public policy goals of the WRCOG PACE Program, including improving the existing housing stock by making properties more energy and water efficient, creating jobs in the construction sector, and reducing greenhouse gas emissions, administration of a statewide program and the high volume of PACE activity also created a to source of revenue for WRCOG and its member agencies.

Since launching the CA HERO Program in 2014, the WRCOG PACE Program (for WRCOG and California) has generated approximately \$34,000,000 in gross revenues through FY 2017/2018. In the same period, the Program has spent approximately \$21,500,000 in operating expenses, leaving approximately \$12,527,000 in additional revenue. At the direction of the Executive Committee, WRCOG developed a series of regionally supportive programs to reinvest some of these funds into projects and programs that directly support WRCOG member agencies.

The following list outlines the projects and programs created, and amount of funds allocated to them as a result of the PACE Program:

Program Name	Program Summary	Funded Amount
Beyond	The Beyond Program provided funding to member agencies for them to implement projects that are consistent with WRCOG's Economic Development and Sustainability Framework	\$4,100,000
Fellowship	This Program works with local universities to place students in long-term fellowships working with member agencies.	\$1,100,000
Grant Writing Services	The Grant Writing Program assists local jurisdictions with Grant Writing and has netted more than 10x the cost of the program in received funding to member agencies	\$700,000
Western Community Energy	Development of a CCA (Community Choice Aggregation) to provide local residents with the choice of power providers, in addition to the investor owner utilities.	\$1,200,000
Regional Streetlight Program	This Program is assisting member jurisdictions with the acquisition and retrofit of their Southern California Edison (SCE)-owned and operated streetlights.	\$276,000
WRCOG Reserves	Agency wide Reserves	\$4,600,000
Experience	Development of a regional innovation center, which would provide a host of community resources, promote sustainable practices, and showcase the assets and capabilities of the subregion.	\$250,000
Water Quality	Funding for the development of a Regional Water Quality Mitigation Program	\$200,000
Government Affairs	Funding for staff and resources in the development of the Government Affairs group within WRCOG.	\$101,000

Beginning in FY 2017/2018, the level of activity for the WRCOG PACE Program began to decline. The decline can be attributed to several factors including, but not limited to, increased competition among other PACE providers operating throughout California and changes in law related to underwriting criteria used to determine a property owner's eligibility to use PACE. The impacts to the WRCOG PACE Program has been significant.

The table below shows the monthly snapshot of activity from January 2017, January 2018, and January 2019 and is illustrative of the decline in PACE residential activity.

Year	Month	Applications Submitted	Applications Approved	% Approved	Completed Assessments	\$ Amount of Completed Assessments
2017	January	3,879	2,897	75%	1,752	\$33,894,212
2018	January	1,974	1,264	64%	1,083	\$23,577,510
2019	January	963	460	48%	325	\$7,383,045

As shown, the overall volume of activity for the CA HERO Program declined by over 80% in approved applications and completed assessments since January 2017. Additionally, the monthly amount of completed assessments fell by nearly 80% from \$33,897,212 in January 2017 to \$7,383,045 in January 2019.

As a result of the decline in activity, WRCOG staff have made several adjustments to the PACE Program. Some actions taken to 'right-size' the Program include a reduction in staff, reductions in legal and consulting expenses.

Although residential PACE has experienced significant declines, the commercial side of PACE, long dormant in California, seems to be awakening as evidenced by the increase WRCOG is seeing in the number of commercial PACE providers expressing interest in pursuing PACE under WRCOG's umbrella. Since 2018, WRCOG has added Greenworks, Clean Fund, Twain, Lord Capital PACE and Lever as new C-PACE providers. That being said staff believes it is too soon to accurately project future commercial activity/implementation.

The decline in PACE activity articulated above is impacting the continued implementation of the regionally supportive programs listed above. Staff will provide a presentation on the status of these programs at the meeting.

Prior Action:

None.

Fiscal Impact:

This item is for informational purposes only; therefore, there is no fiscal impact.

Attachment:

None.

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Western Riverside Council of Governments

Administration & Finance Committee

Staff Report

Subject: 28th Annual General Assembly & Leadership Conference: Nominations for Outstanding Community Service Award

Contact: Cynthia Mejia, Staff Analyst, cmejia@wrcog.us, (951) 405-6752

Date: March 13, 2019

The purpose of this item is to provide an update on the 28th Annual General Assembly & Leadership Conference and to initiate the nomination process for WRCOG's Annual Outstanding Community Service Award. Awardees will be recognized at the General Assembly & Leadership Conference.

Requested Action:

1. Receive and file.

WRCOG's 28th Annual General Assembly & Leadership Conference will be held on Thursday, June 20, 2019, at the Pechanga Resort Casino and will feature Josh Earnest, White House Press Secretary under President Barack Obama (2014-2017) and current Senior Vice President/Chief Communications Officer for United Airlines as keynote speaker.

Staff will provide a verbal update to Committee members regarding planning for the event and initiate a discussion on the process for selecting the Annual Community Service Award winner(s). The award recipient(s) are recognized at the dinner event.

Prior Action:

None.

Fiscal Impact:

This item is for informational purposes only; therefore, there is no fiscal impact.

Attachments:

1. Past Recipients List.
2. Annual Awards Nomination Form.

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Item 5.C

28th Annual General Assembly &
Leadership Conference:
Nominations for Outstanding
Community Service Award

Attachment 1

Past Recipients List

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WRCOG Award for Outstanding Community Service

Each year at the General Assembly & Leadership Address, WRCOG awards individuals and/or organizations for outstanding contributions to improving quality of life in Western Riverside County.

Prior Award Winners

John Tavaglione	Jurupa Unified School District
Marion Ashley	Pat Kilroy
Josiah Bruny	Randall Lewis
Randy Record	Ronald O. Loveridge
John J. Benoit	Anne Mayer
Rose Mayes	Linda Mejia
Kathy Azevedo	Larry and Wayne Minor and their families
Gail Wanczuk Barton	Rosalie Moyer
Jim Birckhead	Tom Mullen
Don Blose	Fred Noble
Martin Bowman	Rita Peters
Burrtec, CR&R, and Waste Management, Inc.	Pete Peterson
Jane Carney	Ali Sahabi
CE-CERT	Rose Salgado
County of Riverside Rideshare	Southern California Gas Company
Jamil Dada	Joe Tavaglione
Dr. Brenda Davis	Barry Wallerstein
Melba Dunlap	Gary Wanczuk
Virginia Field	Roy Wilson
HERO Program Consultant Team	Robert Wolf
Sam Huang	Norton Younglove
Nick Jones	Robert Zweig

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Item 5.C

28th Annual General Assembly &
Leadership Conference:
Nominations for Outstanding
Community Service Award

Attachment 2

Annual Awards Nomination Form

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2019 WRCOG Award for Outstanding Community Service

The **WRCOG Award for Outstanding Community Service** is awarded to an individual or organization for exemplary leadership in community service and significant contributions to improving quality of life in Western Riverside County.

Name of nominator: _____

Phone number of nominator: _____

E-mail address of nominator: _____

Name of nominee(s): _____

Phone number of nominee(s): _____

E-mail address of nominee(s): _____

Please indicate why you are nominating the nominee(s) (200 words maximum):

Please attach any other materials related to the nominee that support your nomination.

All nomination forms and materials must be returned to cmejia@wrcog.us by Friday, March 29, 2019, to be considered for the 2019 Annual Awards.

On April 10, 2019, the Administration & Finance Committee will review all nomination forms received and recommend an award winner to the Executive Committee. On May 6, 2019, the Executive Committee will select an award winner, and all nominees will be notified and invited to the General Assembly & Leadership Conference. The award winner will receive their recognition at the WRCOG General Assembly dinner on Thursday, June 20, 2019, at the Pechanga Resort Casino.

For questions, please contact Cynthia Mejia:

Email: cmejia@wrcog.us

Phone: (951) 405-6752

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Western Riverside Council of Governments

Administration & Finance Committee

Staff Report

Subject: Understanding the Transportation Analysis Implications of Senate Bill 743

Contact: Christopher Gray, Director of Transportation & Planning, cgray@wrcoq.us, (951) 405-6710

Date: March 13, 2019

The purpose of this item is to provide a summary of the study WRCOG has undertaken to develop localized guidelines, thresholds, and mitigation measures related to SB 743. This study is funded through the Southern California Association of Governments' (SCAG) Sustainability Planning Grant Program.

Requested Action:

1. Receive and file.

Senate Bill (SB) 743 changes how transportation impacts are measured under the California Environmental Quality Act (CEQA), from current use of vehicle level of service (LOS) to using vehicle miles traveled (VMT). 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 undertake this effort to help reduce SB 743 implementation costs that could have otherwise been incurred by individual agencies pursuing independent implementation efforts.

This information is provided on a voluntary basis so that each agency can choose to use this information, tailor it for their own use, or not use it at all and proceed independently based on their preference.

Engagement with Local Jurisdictions and Stakeholders

Focus group meetings composed of member jurisdiction staff, environmental and transportation consultants, developers, and other key stakeholders were held to gather feedback on potential VMT methodologies, thresholds, and feasible mitigation measures. These parties were targeted as they work on and deal with transportation impacts, mitigation measures, and CEQA on a day-to-day basis.

WRCOG and the project team provided numerous updates to the WRCOG Planning Directors' Committee and Public Works Committee. In addition, an introductory workshop was offered to the staff at local jurisdictions and occurred in June 2018. Lastly, workshops were conducted with the transportation and environmental consultants in September 2018, and with the developers and legal field in November 2018. The working papers that are summarized in this report were provided in November 2018 to all attendees for feedback.

Next Steps

This study is the first of its kind; several nearby subregions and jurisdictions have inquired about the study and the level of detail it will provide. The City of Santa Ana and the San Bernardino County Transportation Authority have already commenced similar studies for their respective jurisdictions, and SCAG is recommending to its Regional Council that funding be allocated to similar studies for jurisdictions throughout the region.

WRCOG recognizes there are a few follow-on items that may be prompted to provide additional assistance and benefits to member jurisdictions. One item WRCOG is looking into is updating the County of Riverside Traffic Impact Analysis Preparation Guide to integrate SB 743 analyses. In addition, the methodology to forecast 'project generated VMT', the VMT thresholds, and the mitigation measures utilized must be adopted by each jurisdiction. As such, WRCOG will be working on sample staff reports to assist jurisdictions with this process. WRCOG will work on these items in the near future and come back to the appropriate Committee for discussion and input.

Key Issues Addressed

The project team has prepared seven working papers to date for this project, and they are included as an attachment to this report. 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?

1. 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 SCAG Regional Transportation Plan travel forecasting model and the Riverside County Transportation Analysis Model (RIVTAM). In addition, data from the California Household Travel Survey 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 subregion.

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 subregion. 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.

2. 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 subregion.

3. 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 subregion. 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.

Prior Action:

September 10, 2018: The Executive Committee received and filed.

Fiscal Impact:

This item is being funded through SCAG; therefore, there is no fiscal impact.

Attachment:

1. WRCOG SB 743 Implementation Pathway – Working Paper Document Package.

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Item 5.D

Understanding the Transportation
Analysis Implications of Senate Bill
743

Attachment 1

WRCOG SB 743

Implementation Pathway –
Working Paper Document Package

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WRCOG SB 743 Implementation Pathway

Working Paper Document Package



FEHR  PEERS



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.

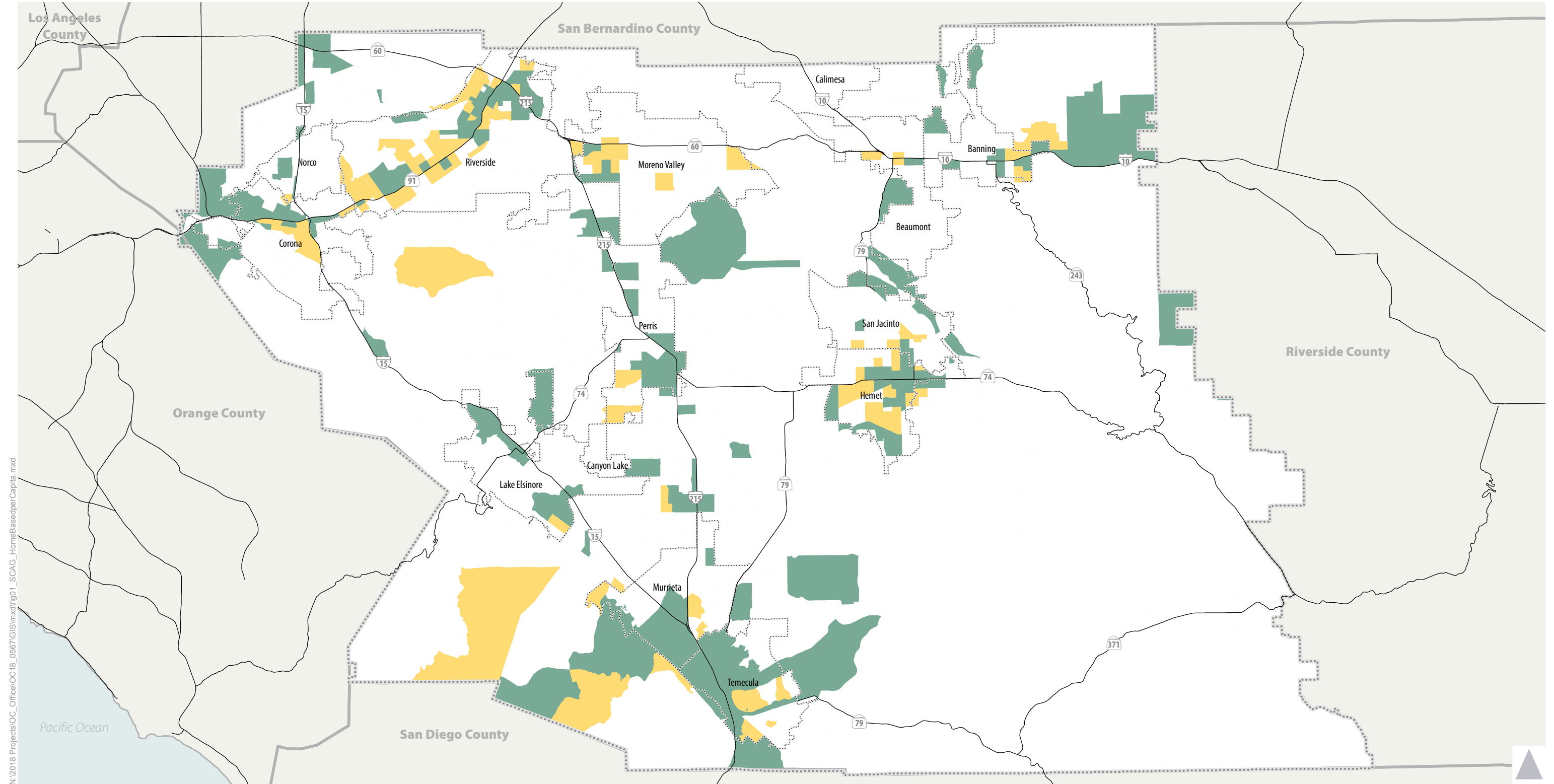
Baseline conditions for CEQA purposes would be specific to the release date of a project's notice of preparation (NOP). Hence, the project team recommends interpolating between the 2012 and 2040 VMT data to establish specific VMT values associated with a baseline year. Spreadsheets containing the 2012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

DRAFT

ATTACHMENT A – SCAG VMT Data

DRAFT



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

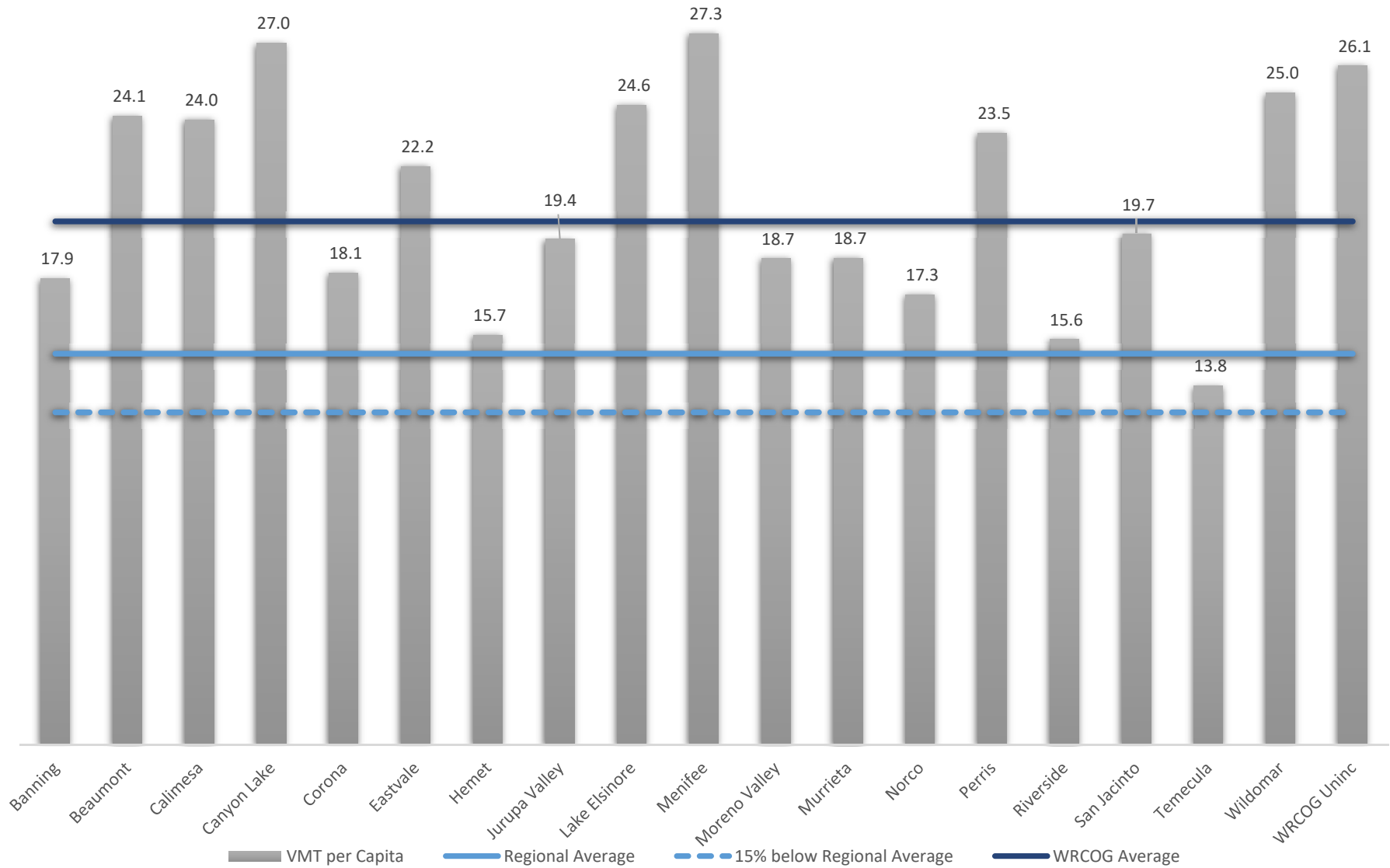
* SCAG Regional Average calculated using SCAG Model.

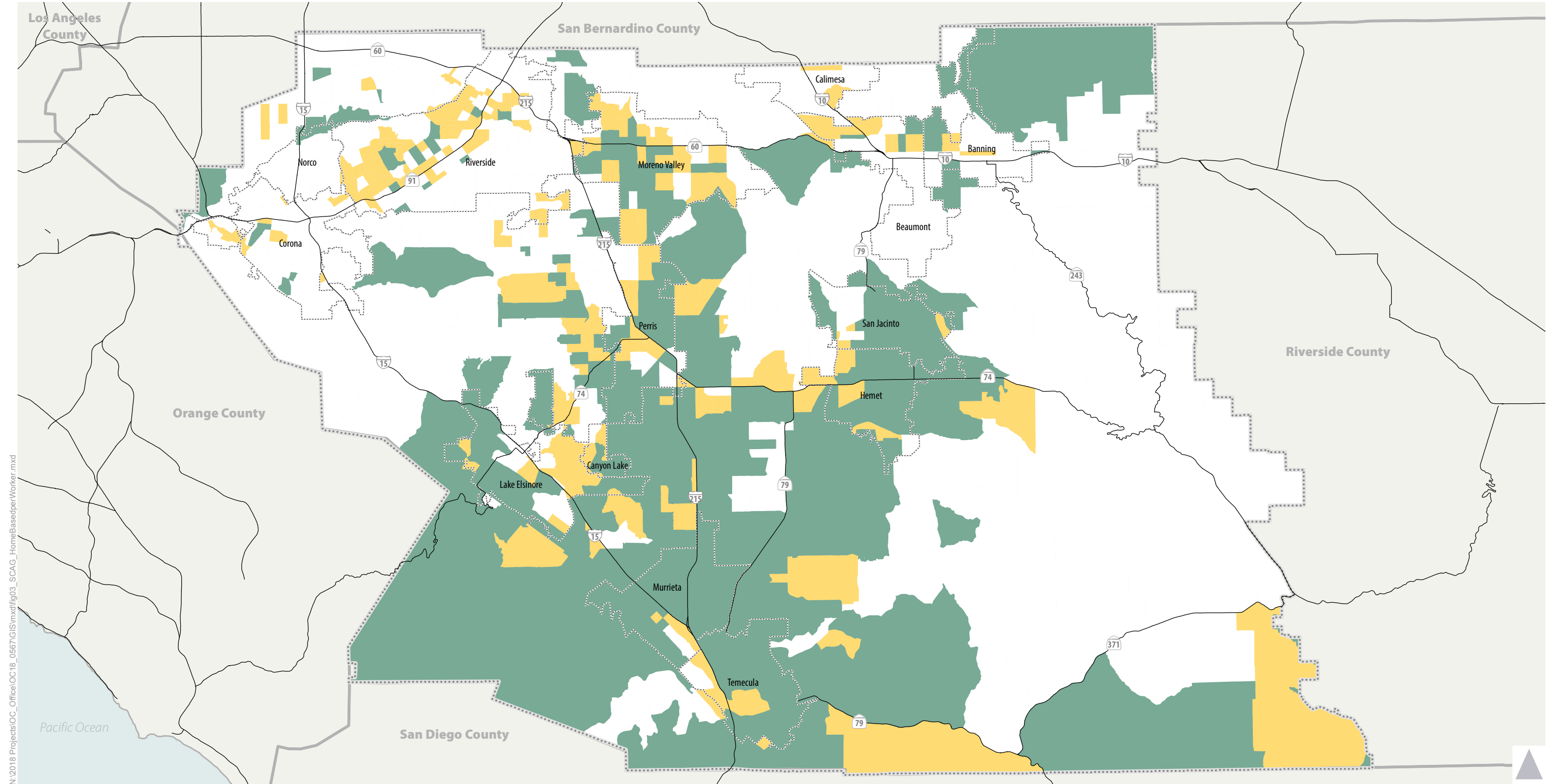
Figure 1



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





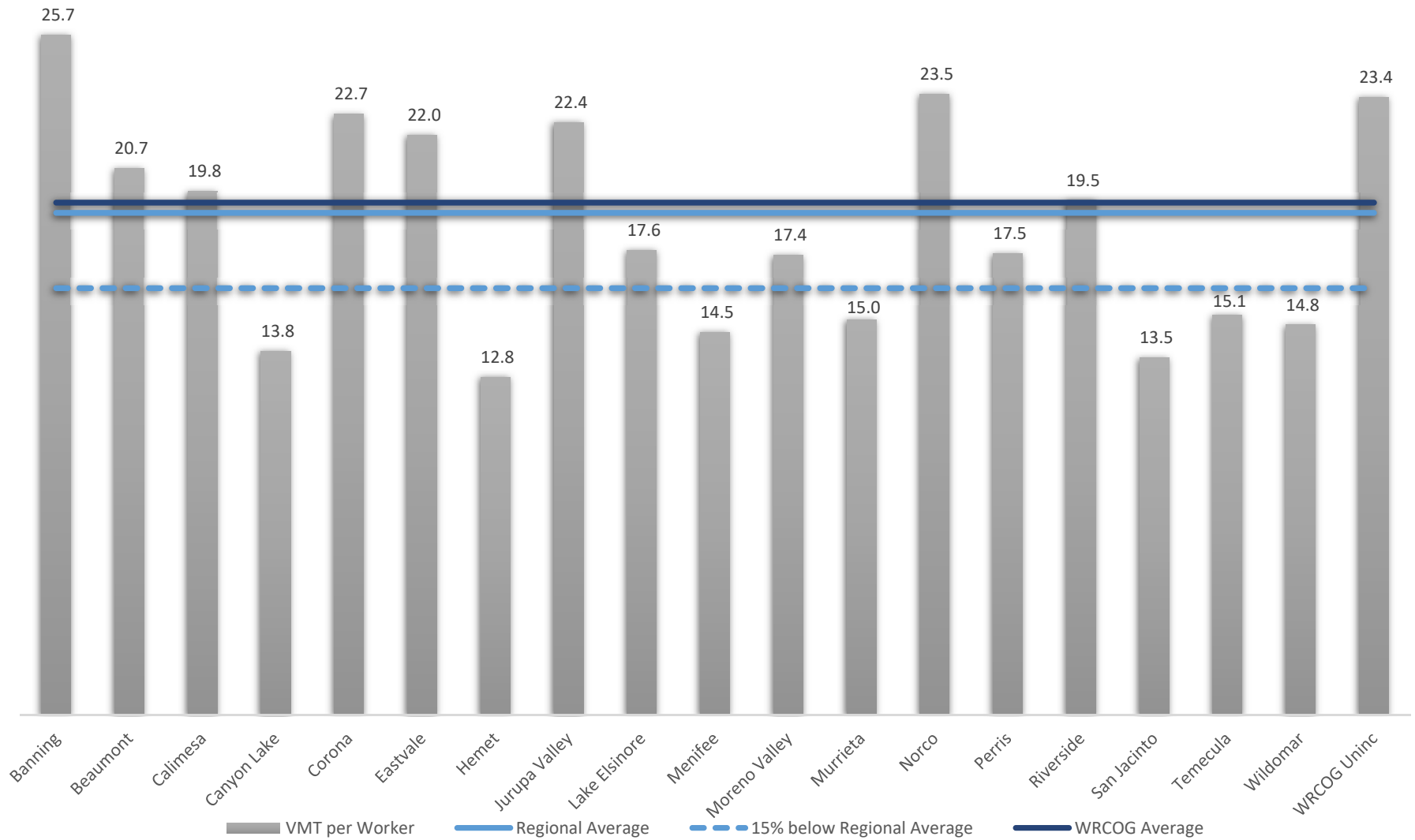
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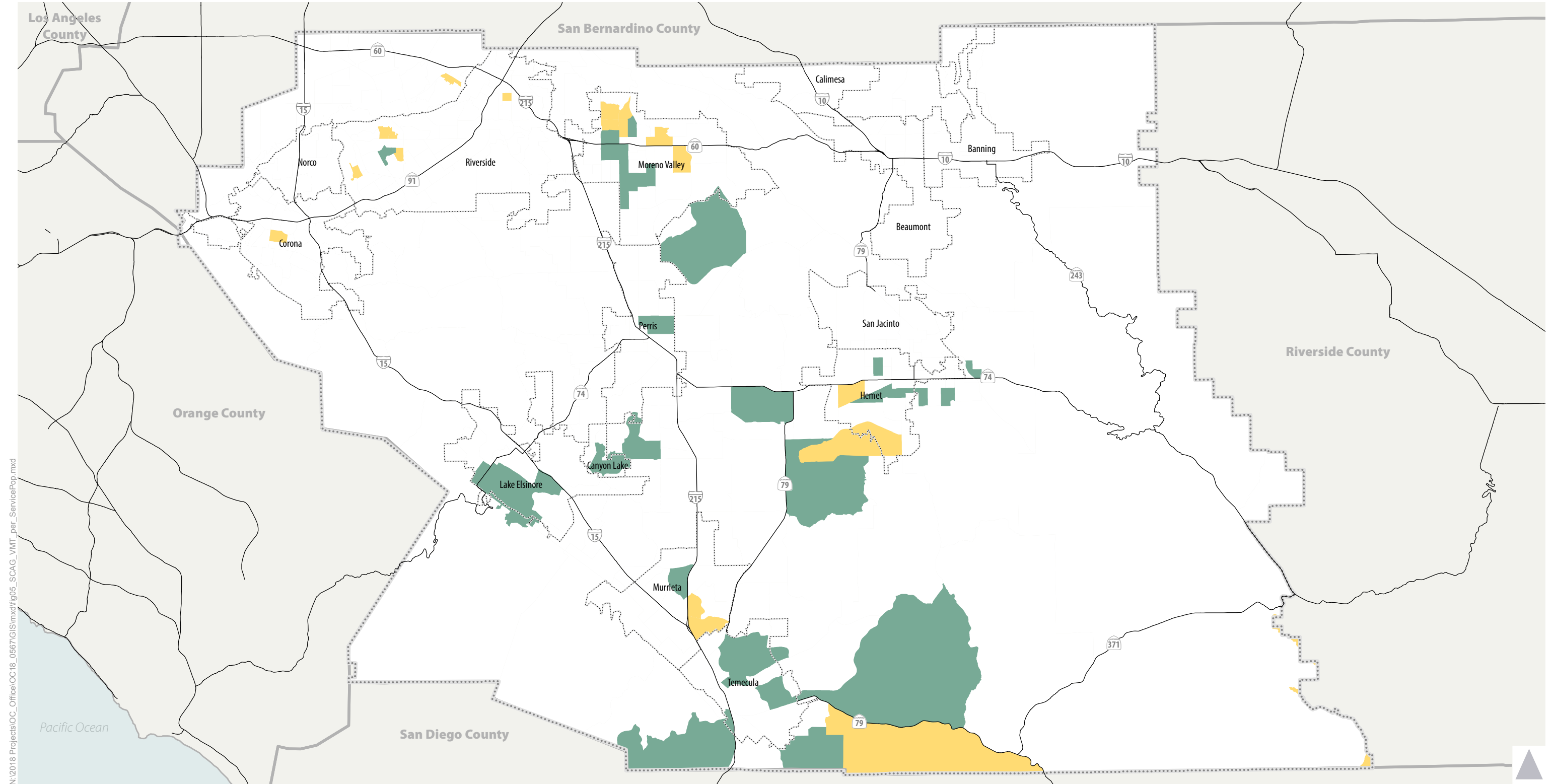


Figure 3

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





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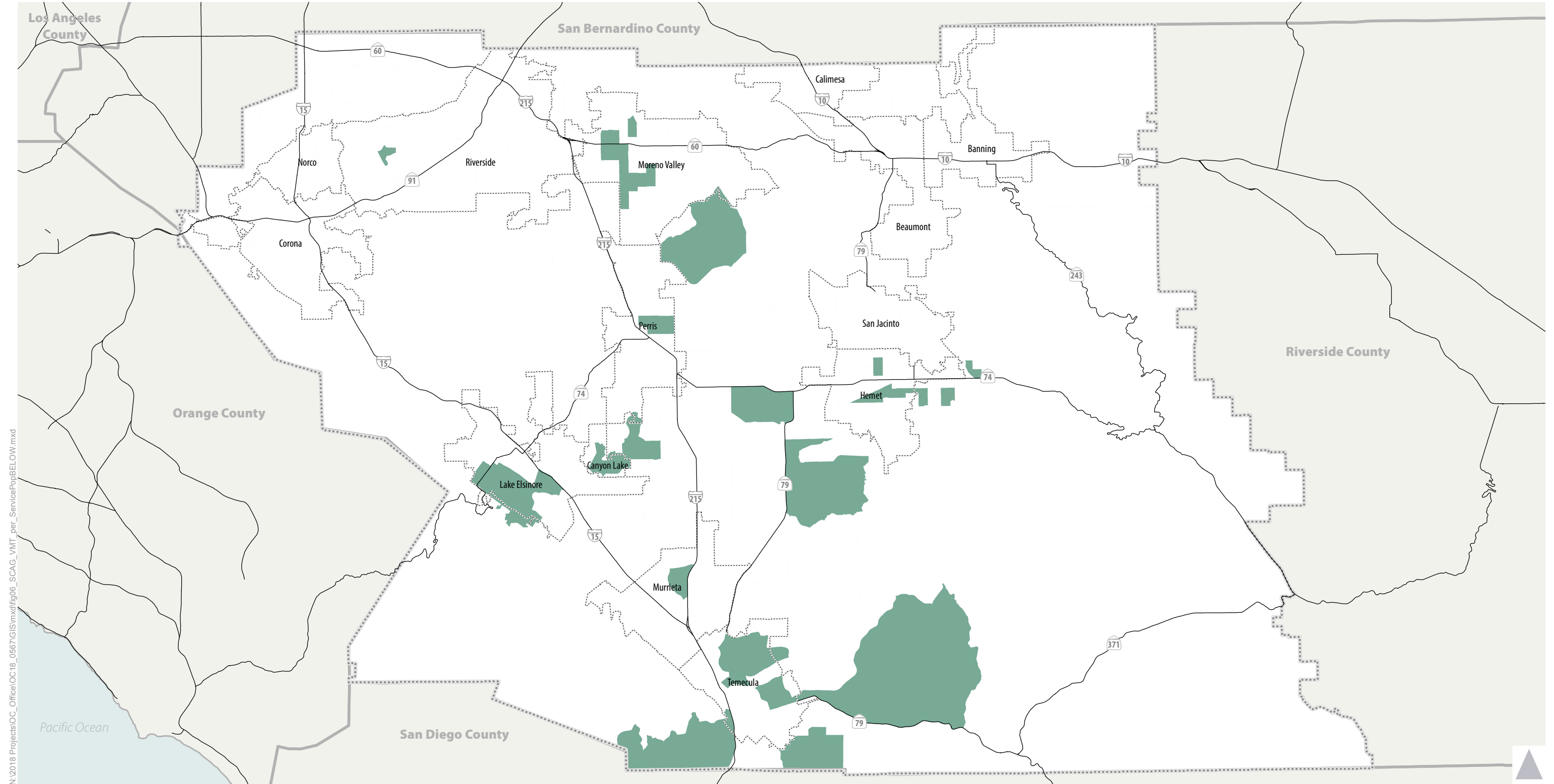
- < -15% below SCAG Regional Average *
- 0 to -15% below SCAG Regional Average
- Higher than SCAG Regional Average
- WRCOG Boundary
- County Boundary
- City Limits

* SCAG Regional Average calculated using SCAG Model.

Figure 5



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



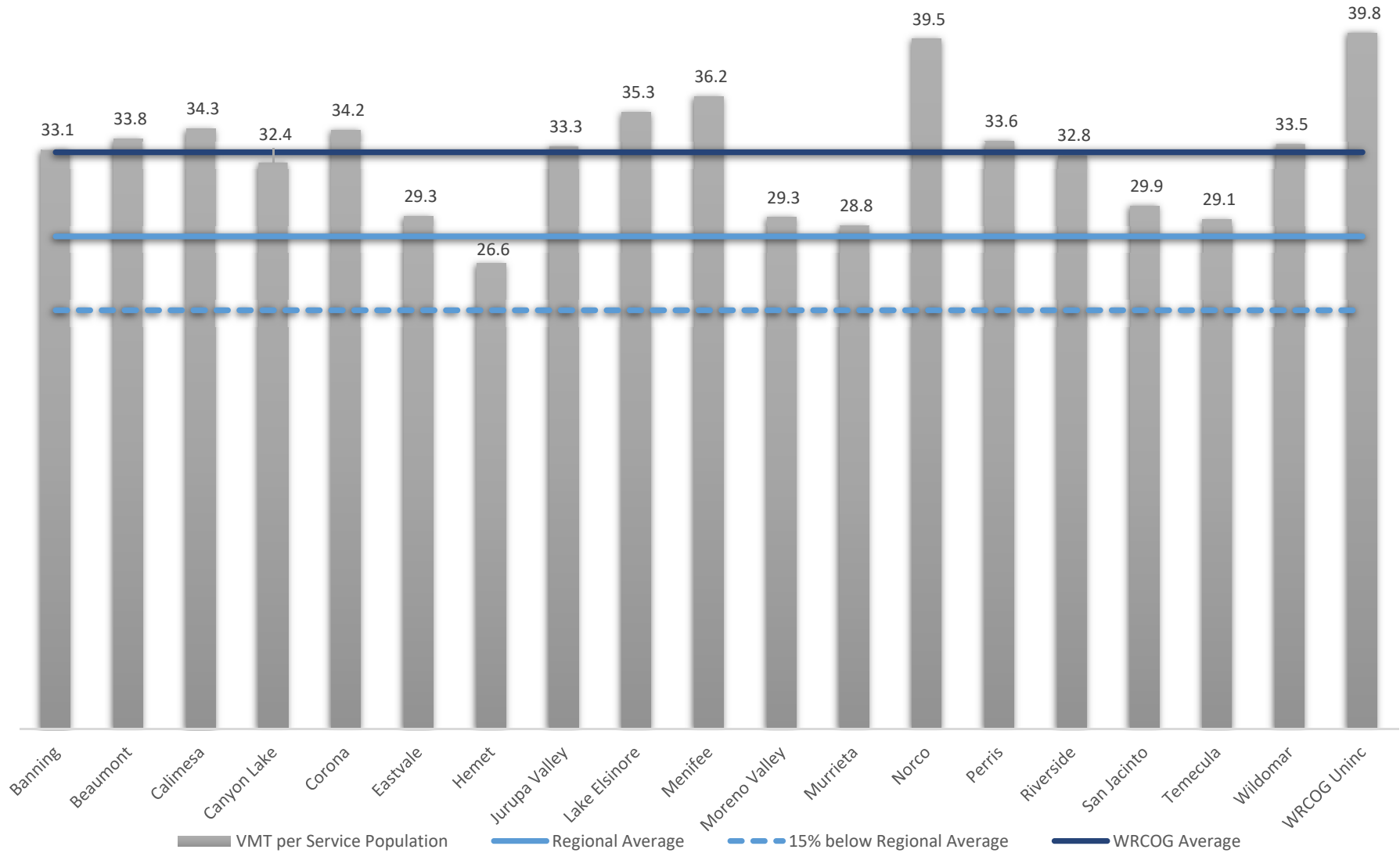
- < -15% below SCAG Regional Average *
 - Higher than SCAG Regional Average
 - WRCOG Boundary
 - County Boundary
 - City Limits
- * SCAG Regional Average calculated using SCAG Model.

Figure 6



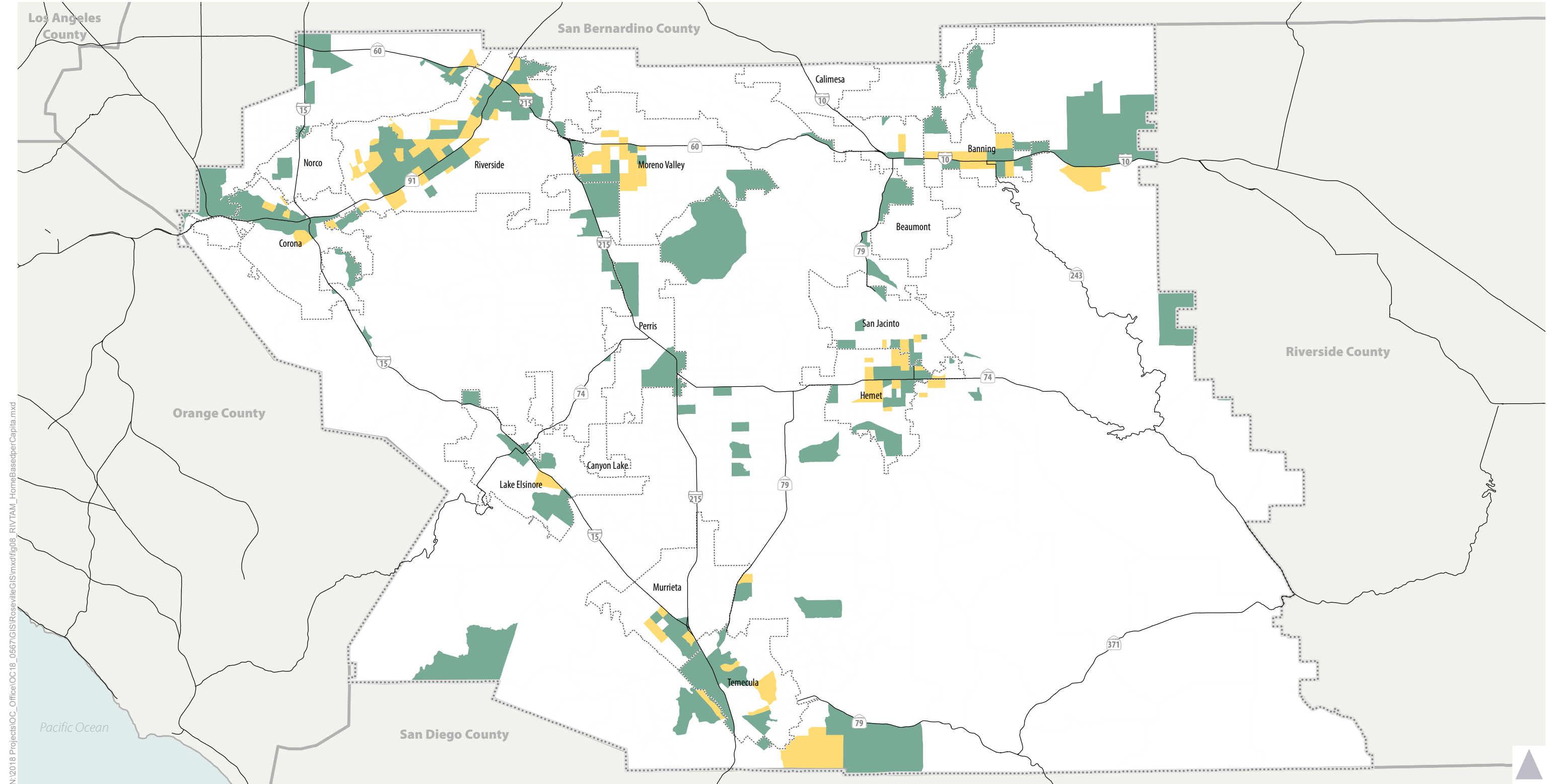
SCAG Model (2012)
TAZs Performing Better than 15% below SCAG Regional Average of
Daily VMT per Service Population in only the SCAG Model

SCAG Model (2012) Daily Total VMT per Service Population



ATTACHMENT B – RIVTAM VMT Data

DRAFT



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

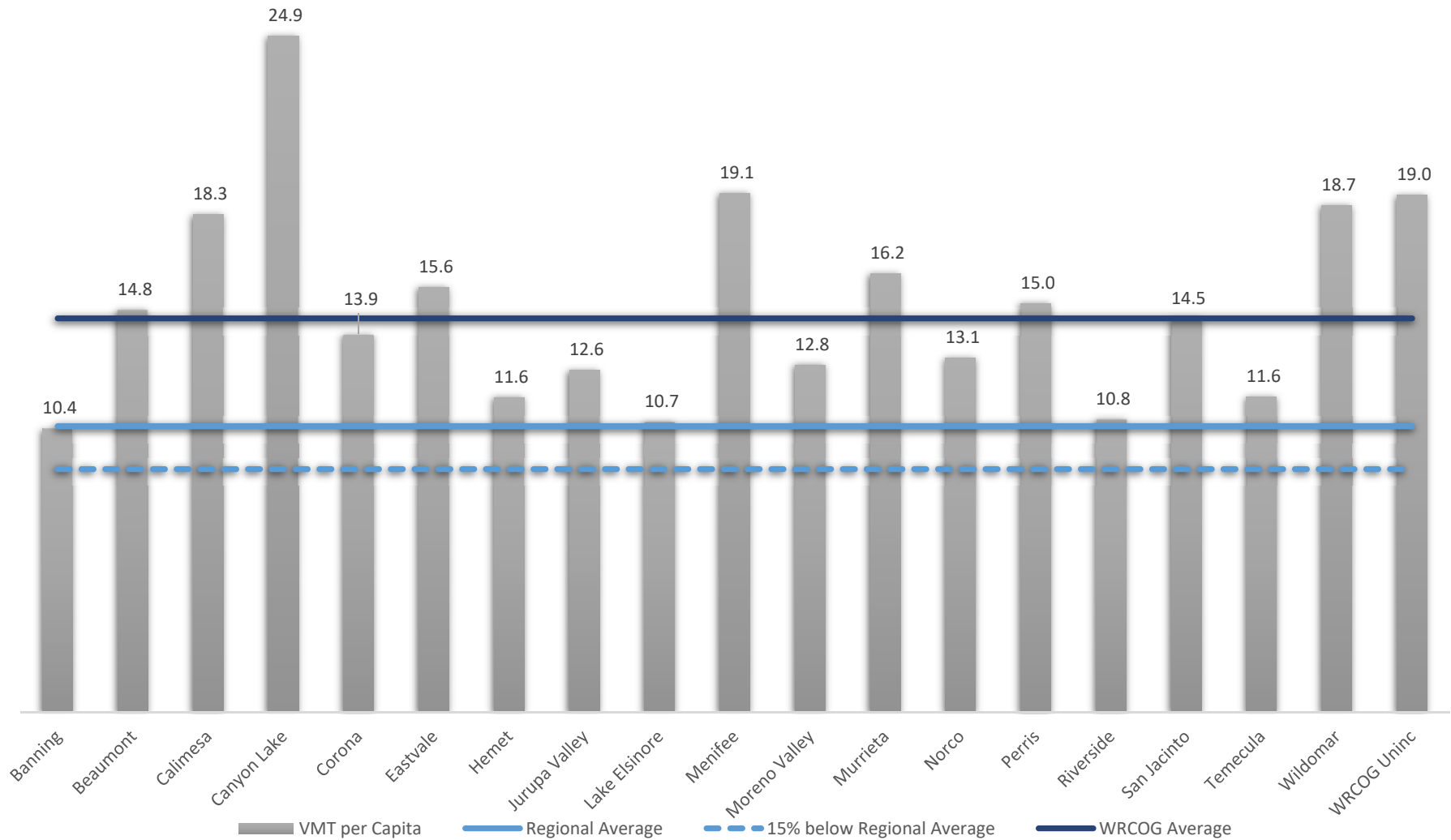
* SCAG Regional Average calculated using RIVTAM Model.

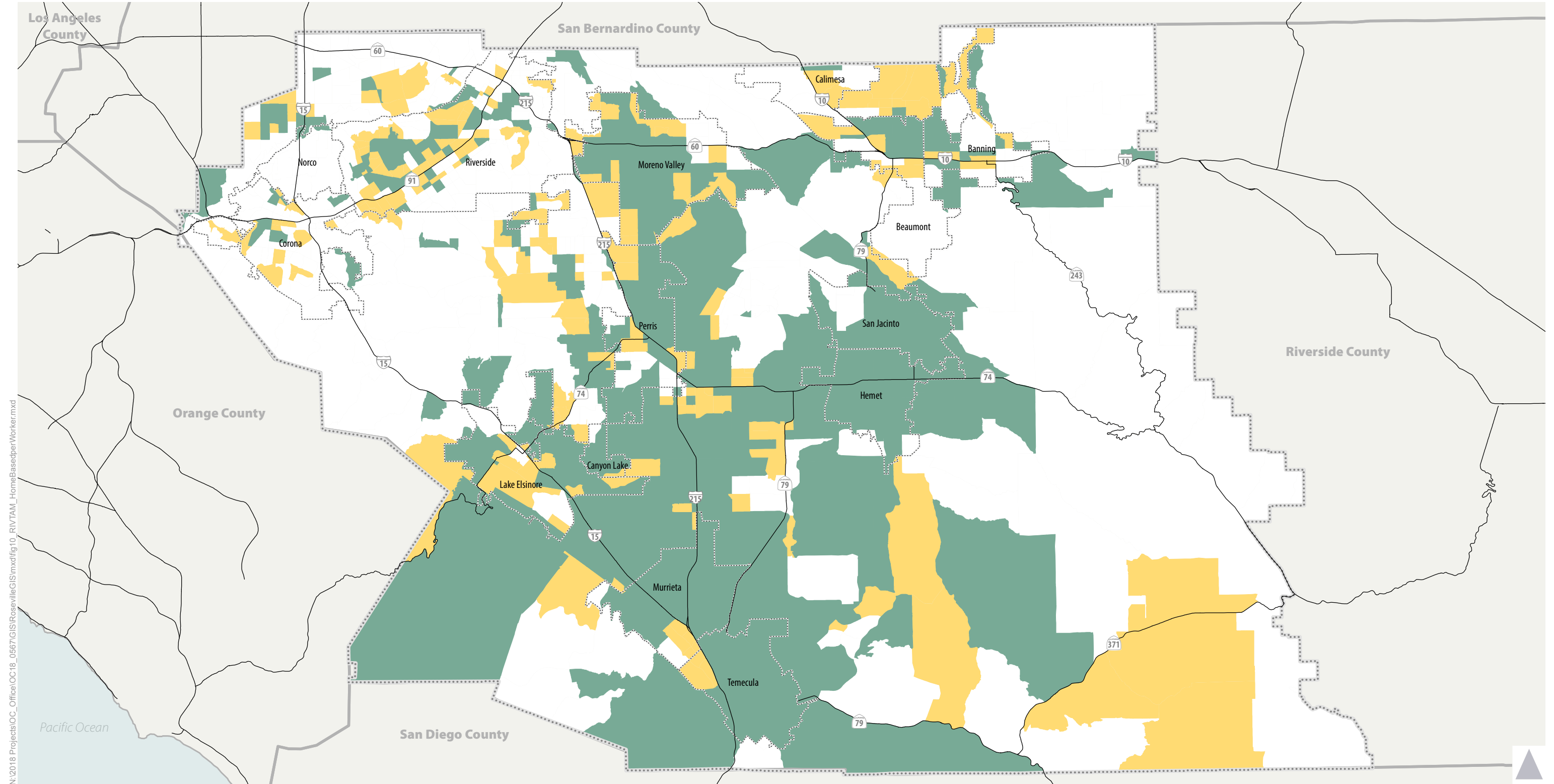
Figure 8



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

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





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

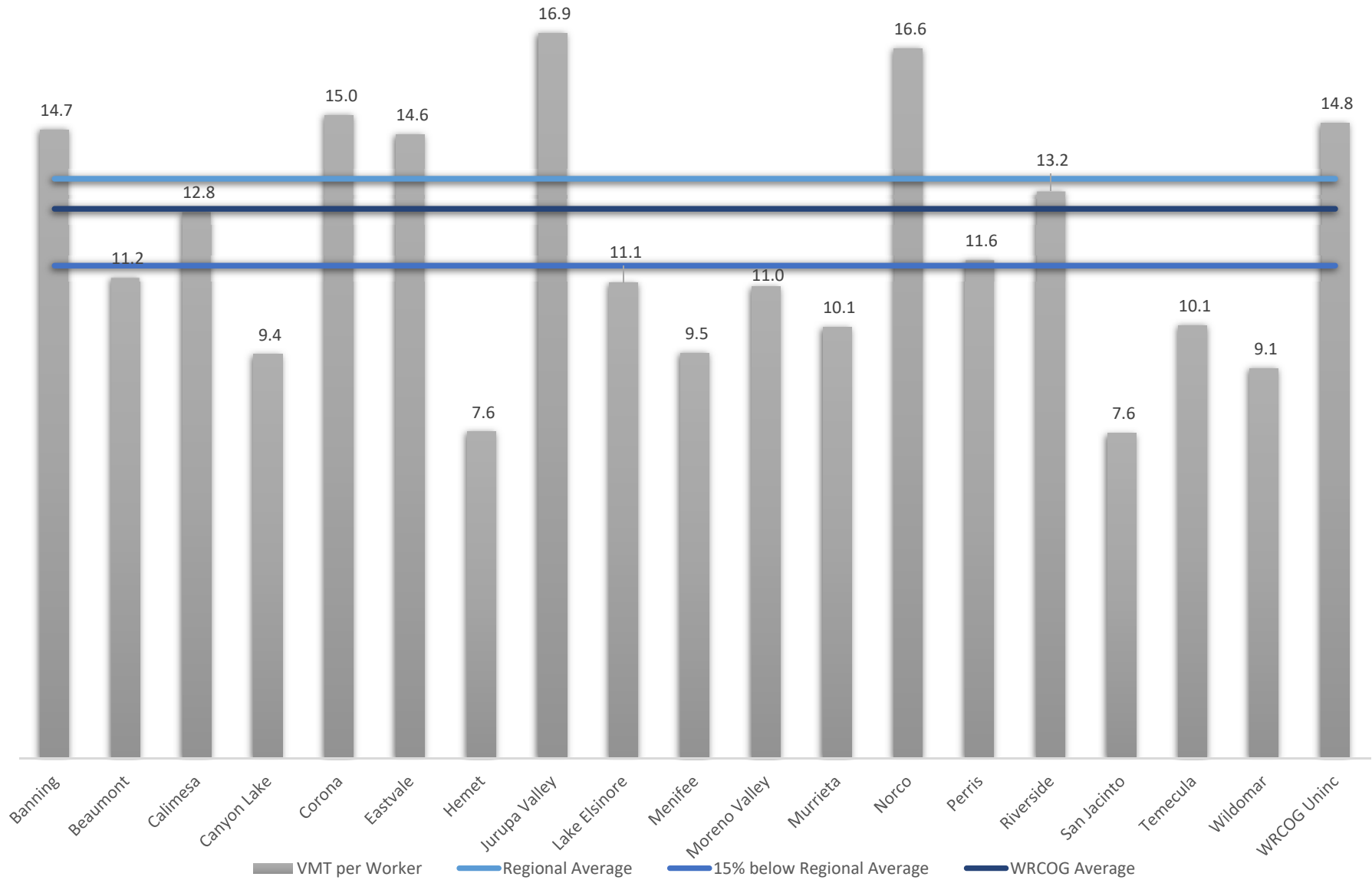
* SCAG Regional Average calculated using RIVTAM Model.

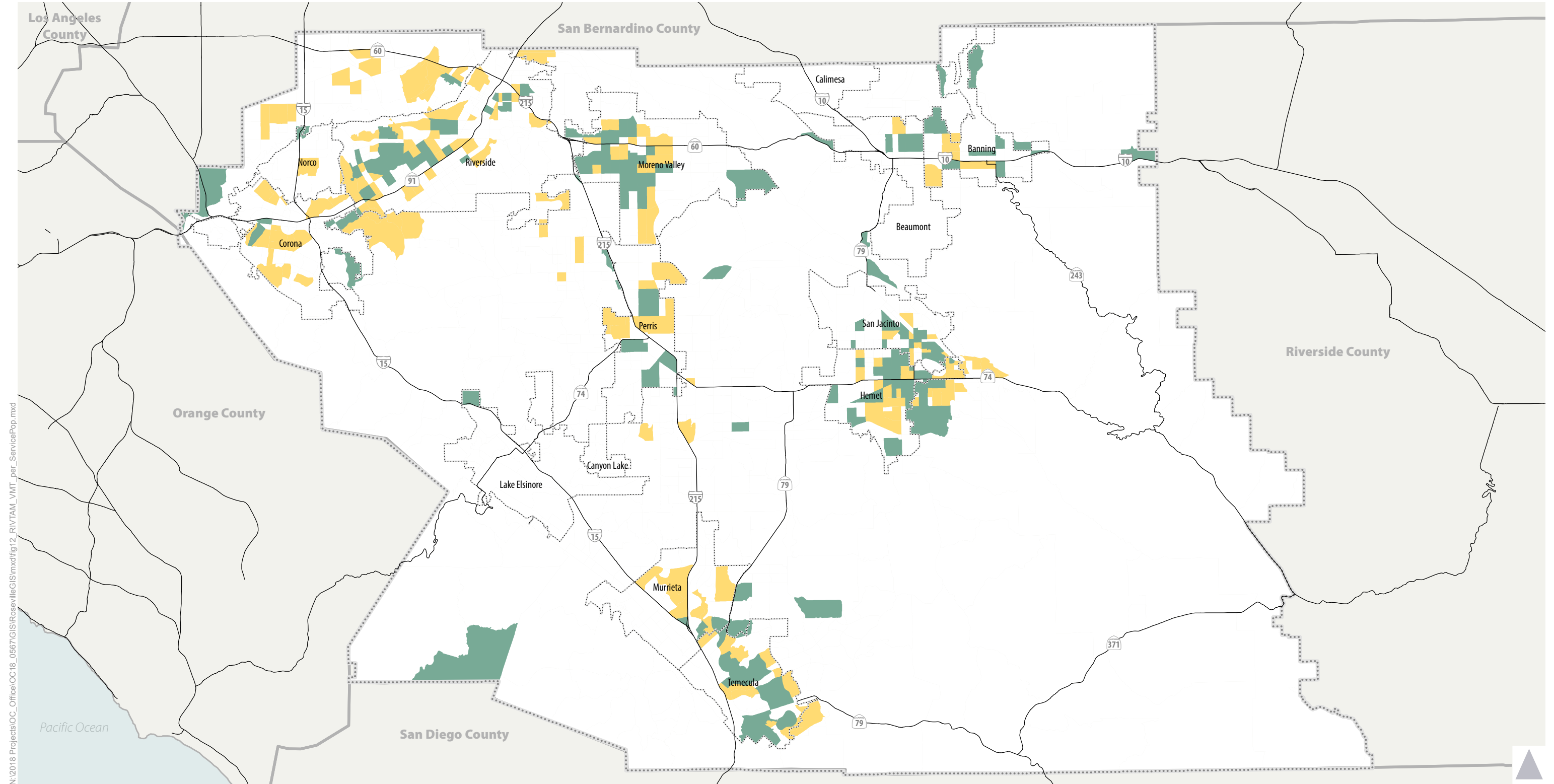
Figure 10



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

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





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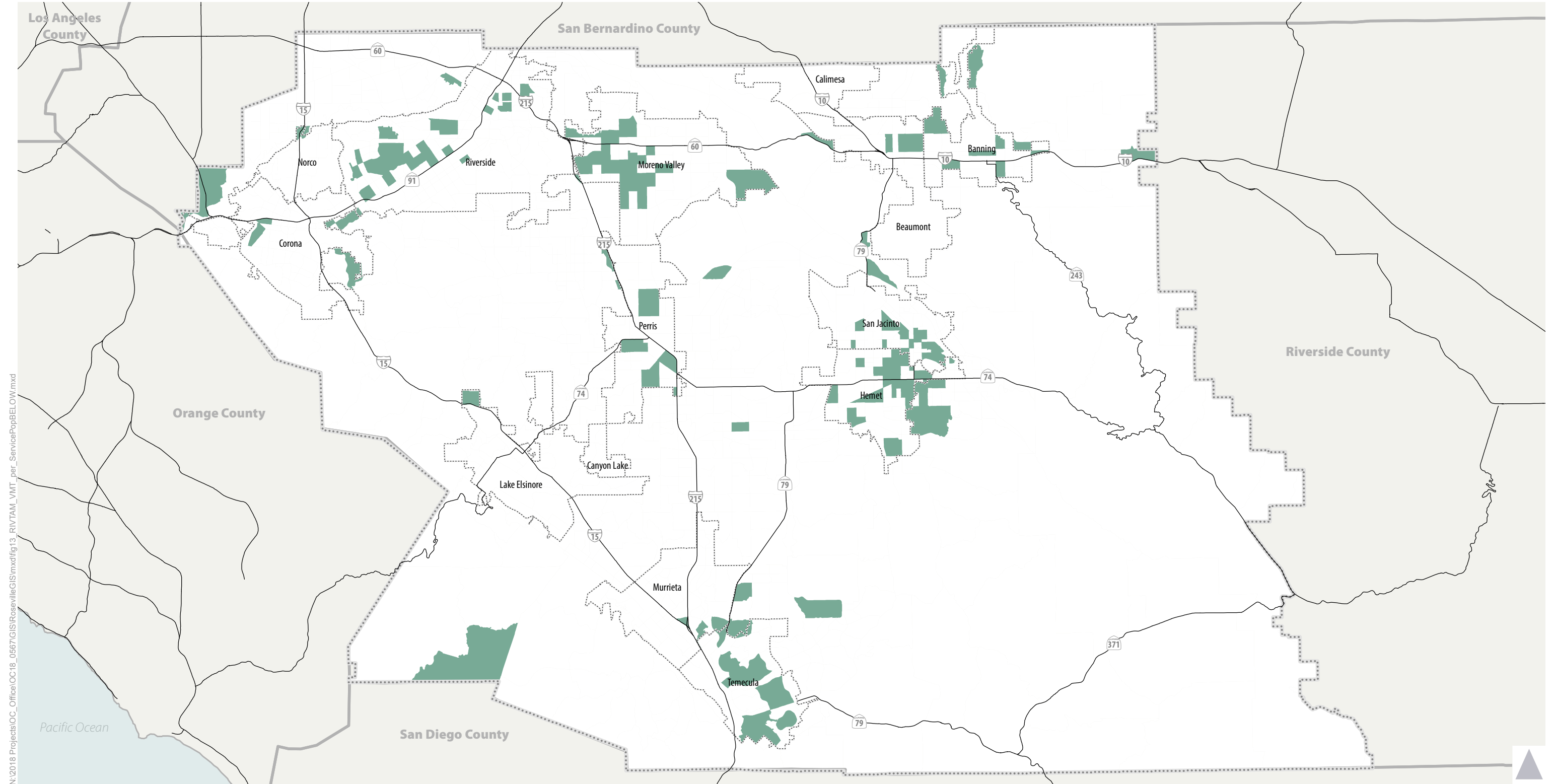
- < -15% below SCAG Regional Average *
- 0 to -15% below SCAG Regional Average
- Higher than SCAG Regional Average
- WRCOG Boundary
- County Boundary
- City Limits

* SCAG Regional Average calculated using RIVTAM Model.

Figure 12



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

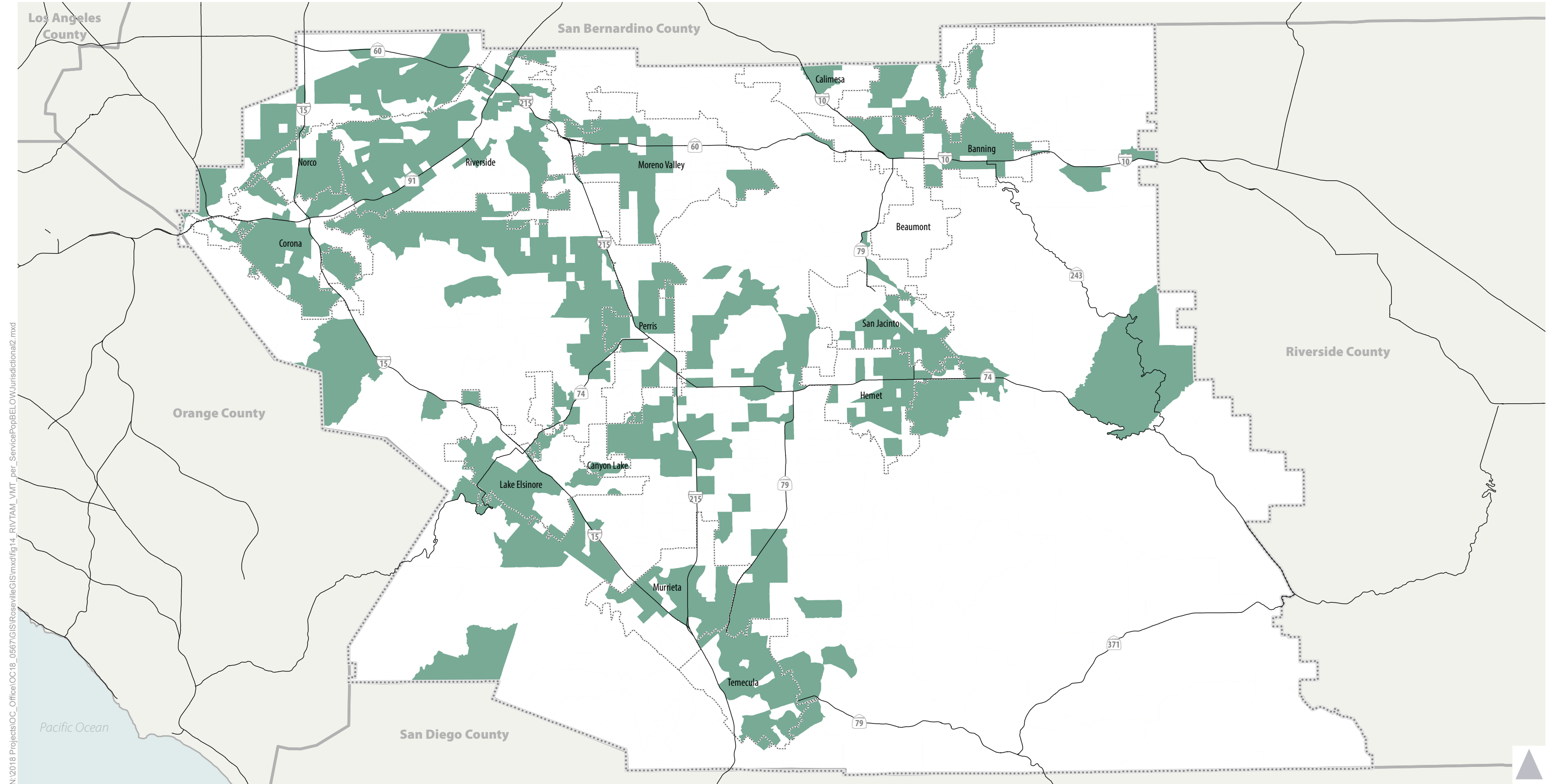


- < -15% below SCAG Regional Average *
 - Higher than SCAG Regional Average
 - WRCOG Boundary
 - County Boundary
 - City Limits
- * SCAG Regional Average calculated using RIVTAM Model.

Figure 13



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



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- At or below Jurisdictional Average *
- Higher than Jurisdictional Average
- WRCOG Boundary
- County Boundary
- City Limits

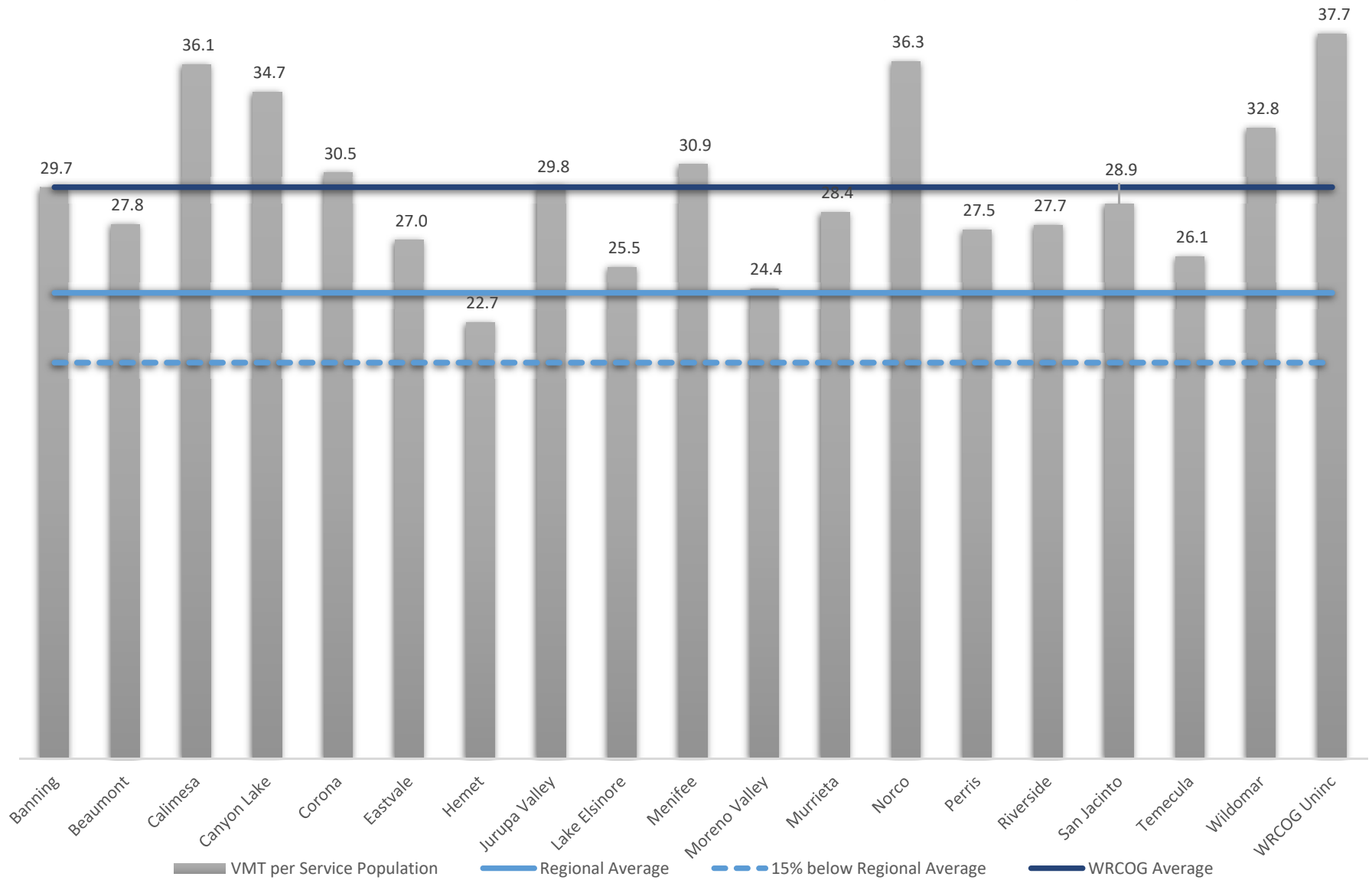
* Jurisdictional Average calculated using RIVTAM Model.

Figure 14

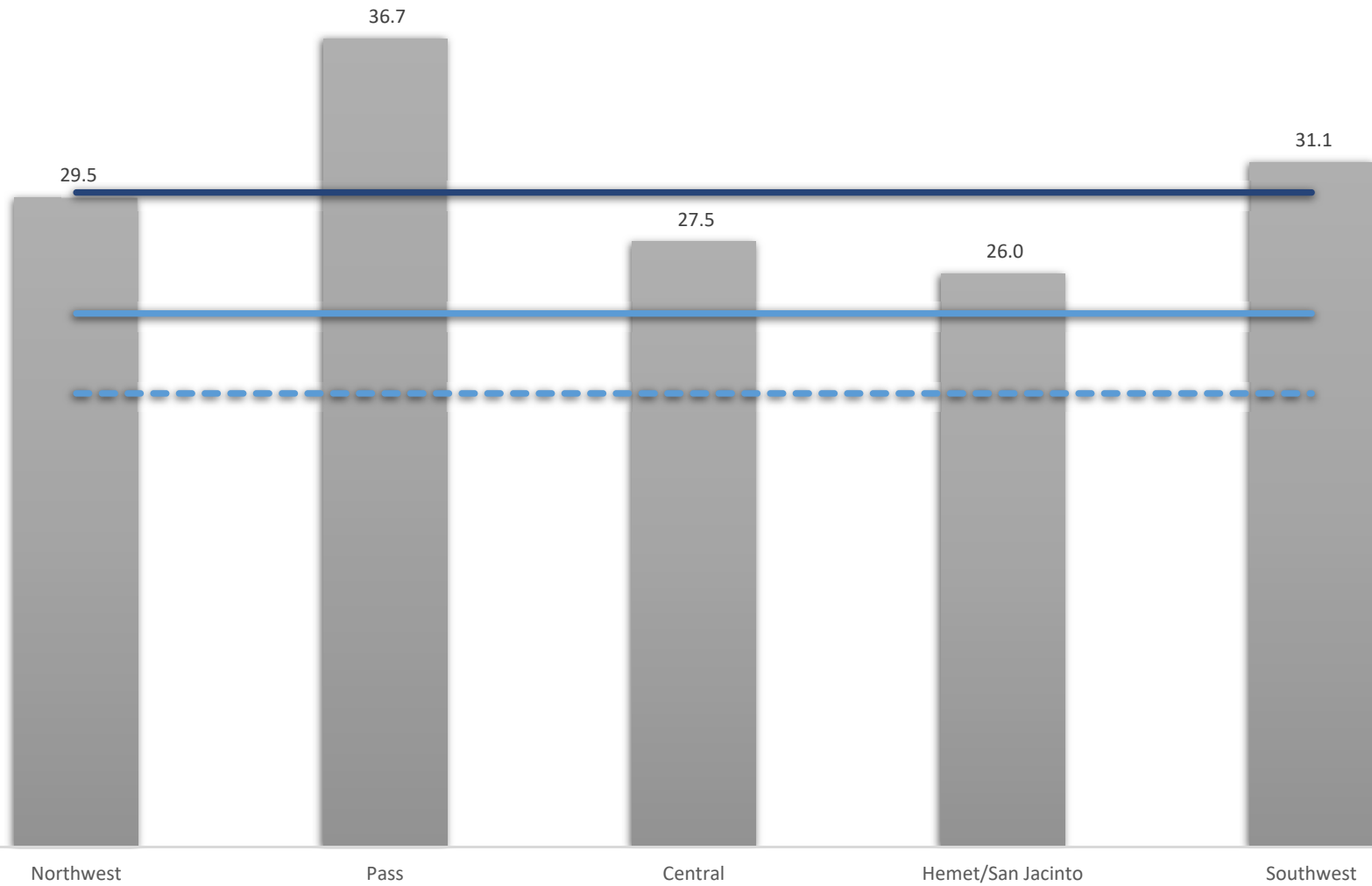


RIVTAM Model (2012)
TAZs Performing at or below 2012 Jurisdictional Average of
Daily VMT Per Service Population in only the RIVTAM Model

RIVTAM Model (2012) Daily Total VMT per Service Population



RIVTAM Model (2012) Daily Total VMT per Service Population by TUMF Zone



■ VMT per Service Population — Regional Average - - - 15% below Regional Average — WRCOG Average

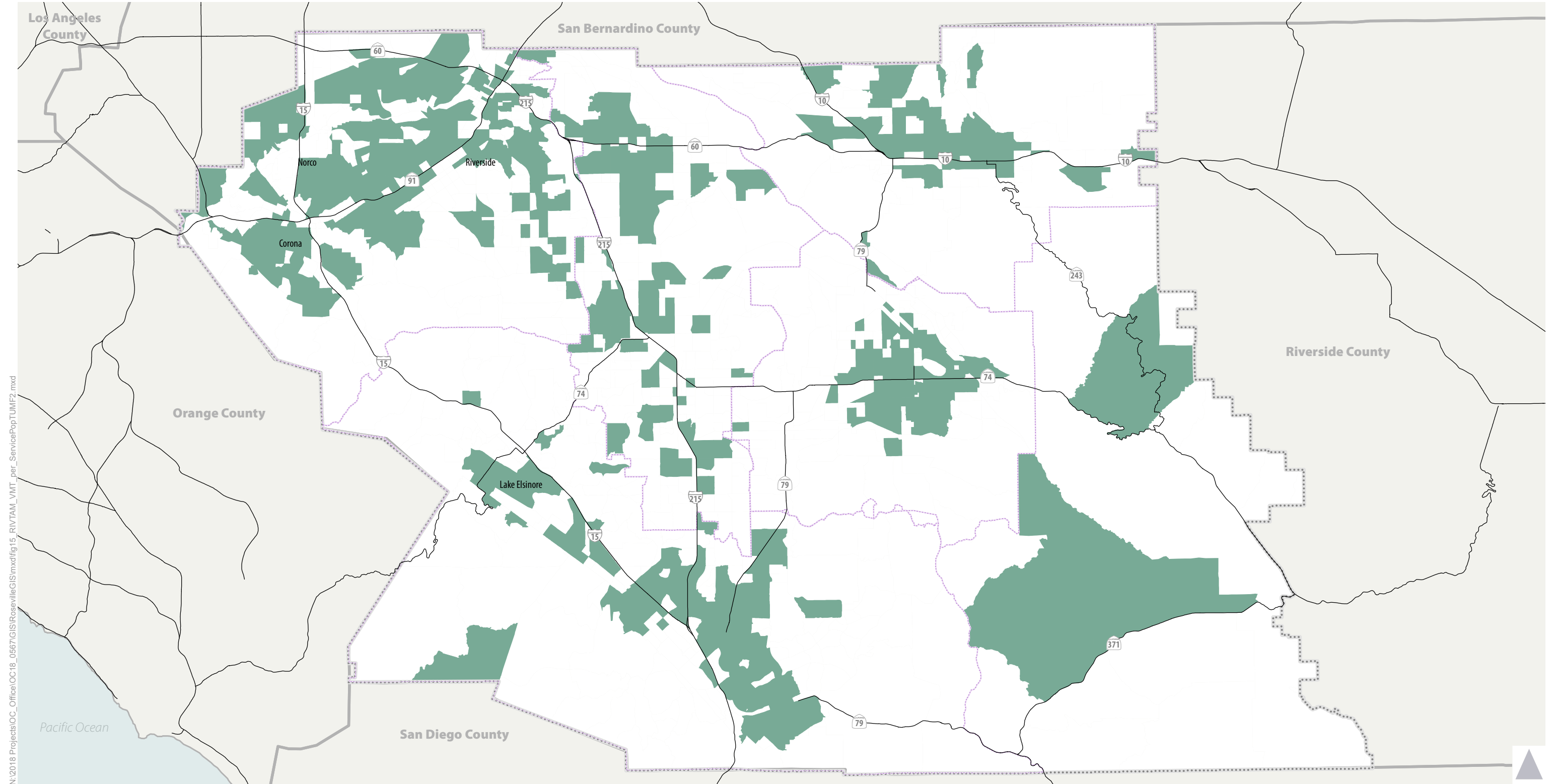
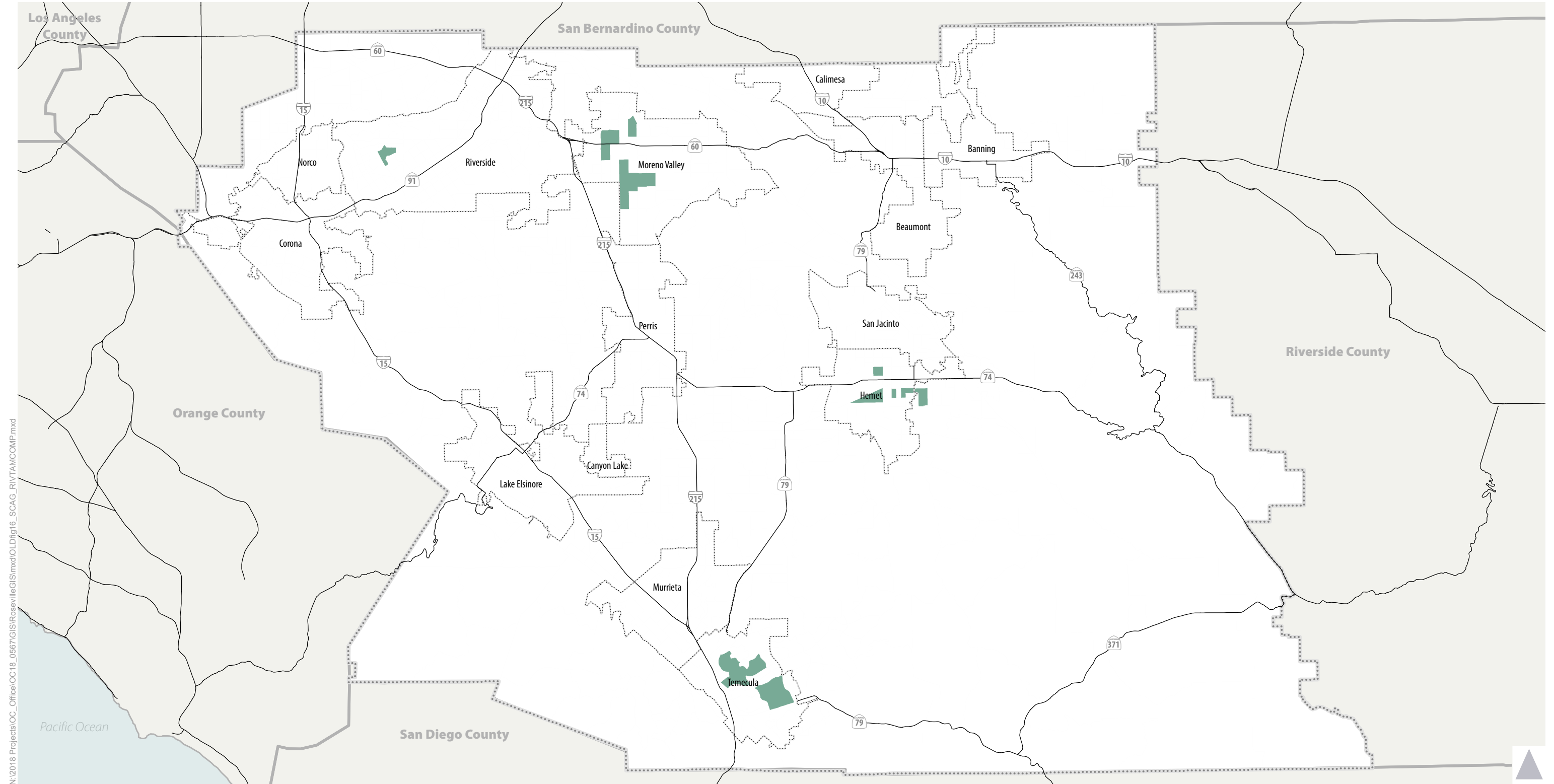


Figure 15

RIVTAM Model (2012)
TAZs Performing at or below 2012 TUMF Zonal Average of
Daily VMT Per Service Population in only the RIVTAM Model



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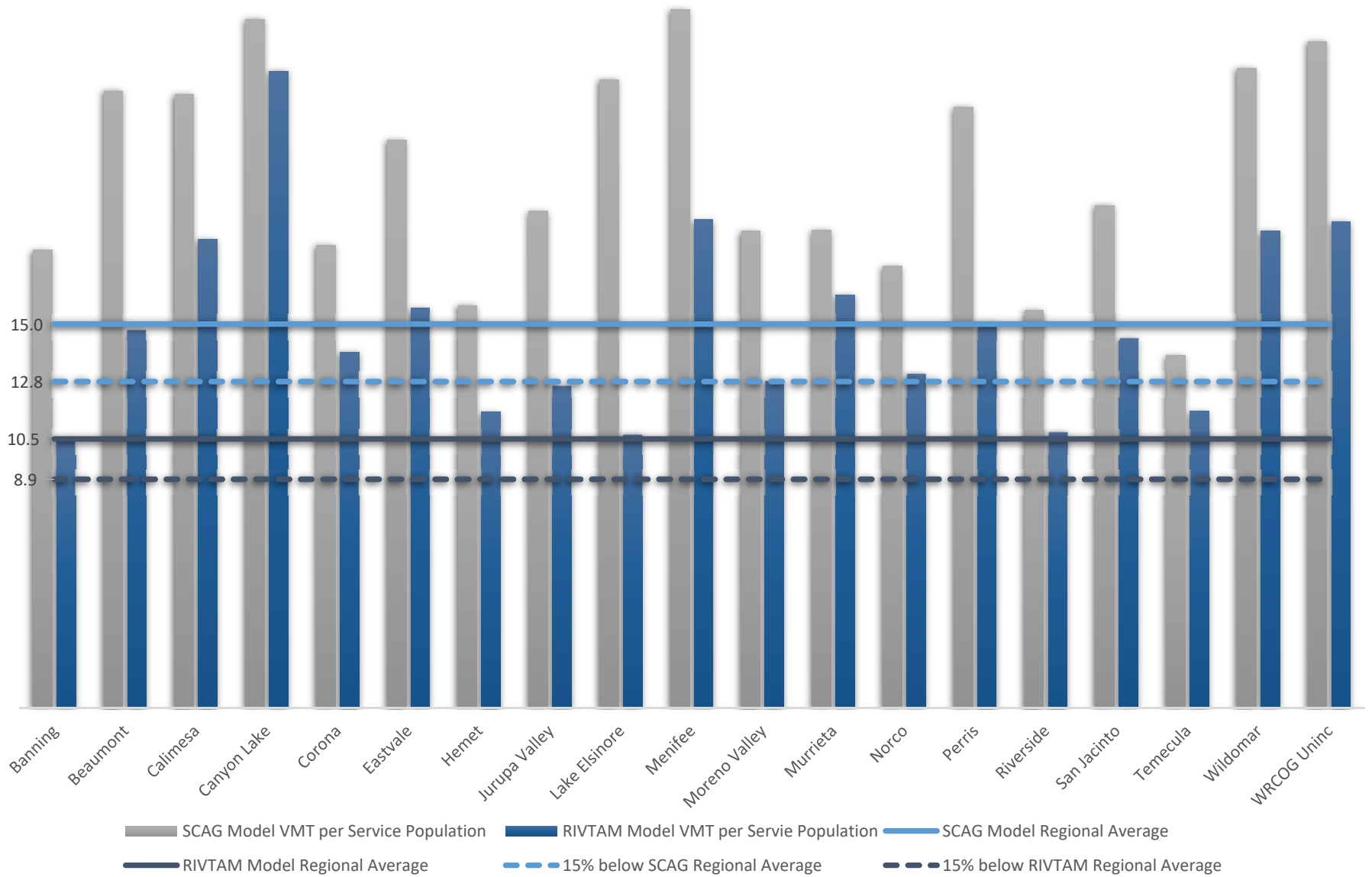
- < -15% below SCAG Regional Average in both the SCAG and RIVTAM Models
 - WRCOG Boundary
 - County Boundary
 - City Limits
 - Higher than SCAG Regional Average
- * SCAG Regional Average calculated using SCAG Model.

Figure 16

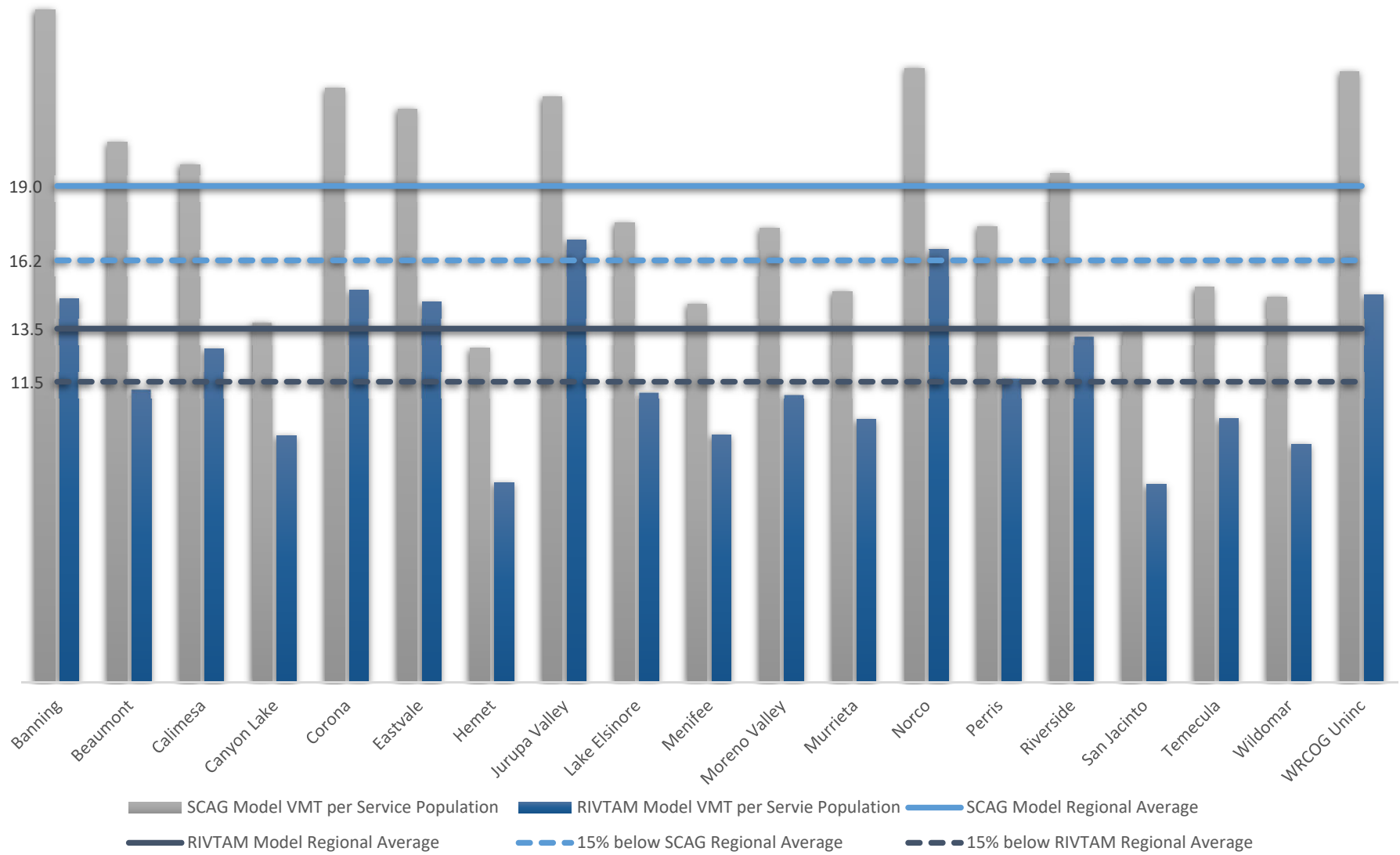


SCAG Model (2012)
TAZs Performing Better than 15% below SCAG Regional Average of Daily VMT per Service Population in both the SCAG and RIVTAM Models

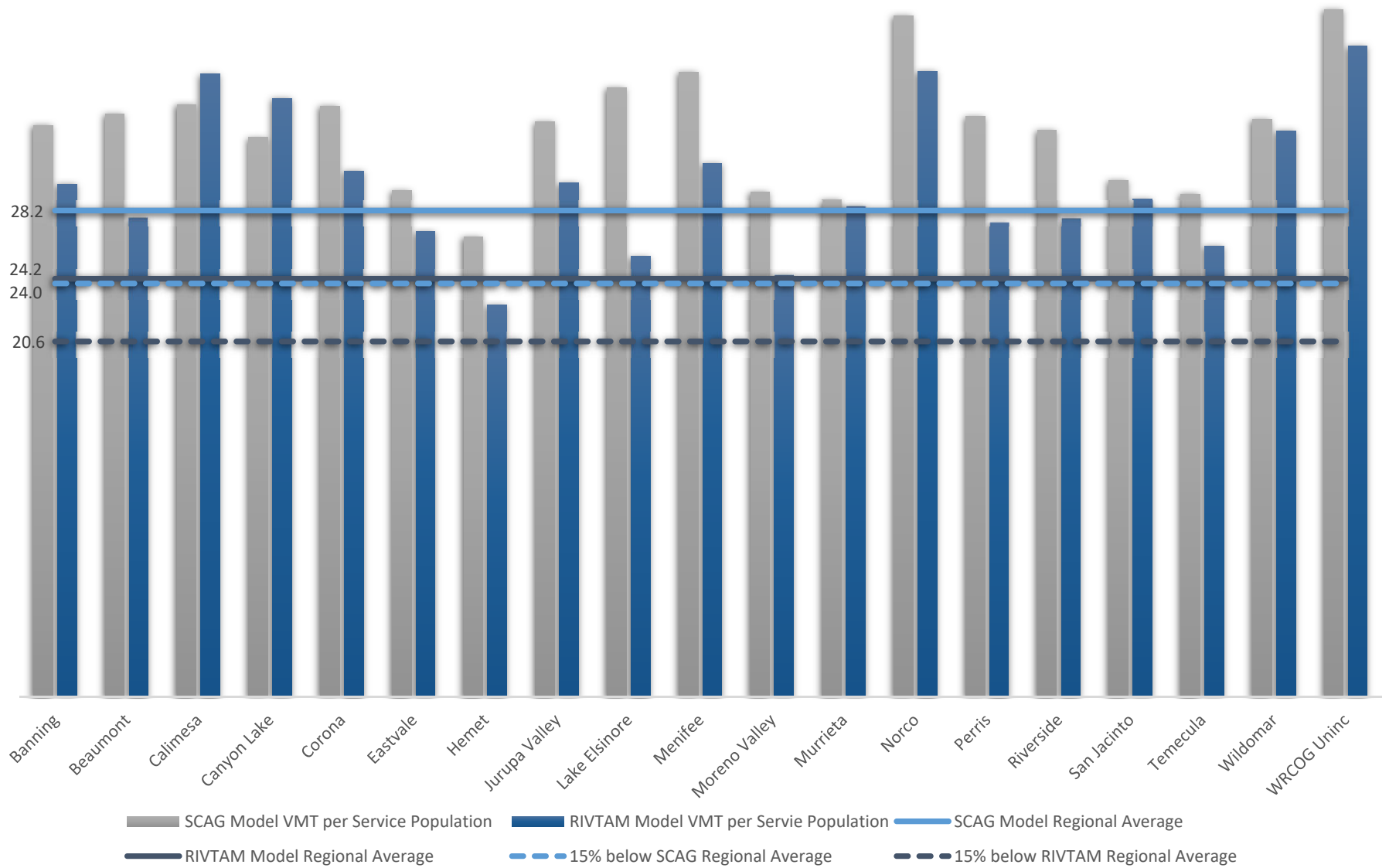
2012 Daily Residential Home Based VMT per Capita Model Comparison



2012 Daily Home Based Work VMT per Worker Model Comparison

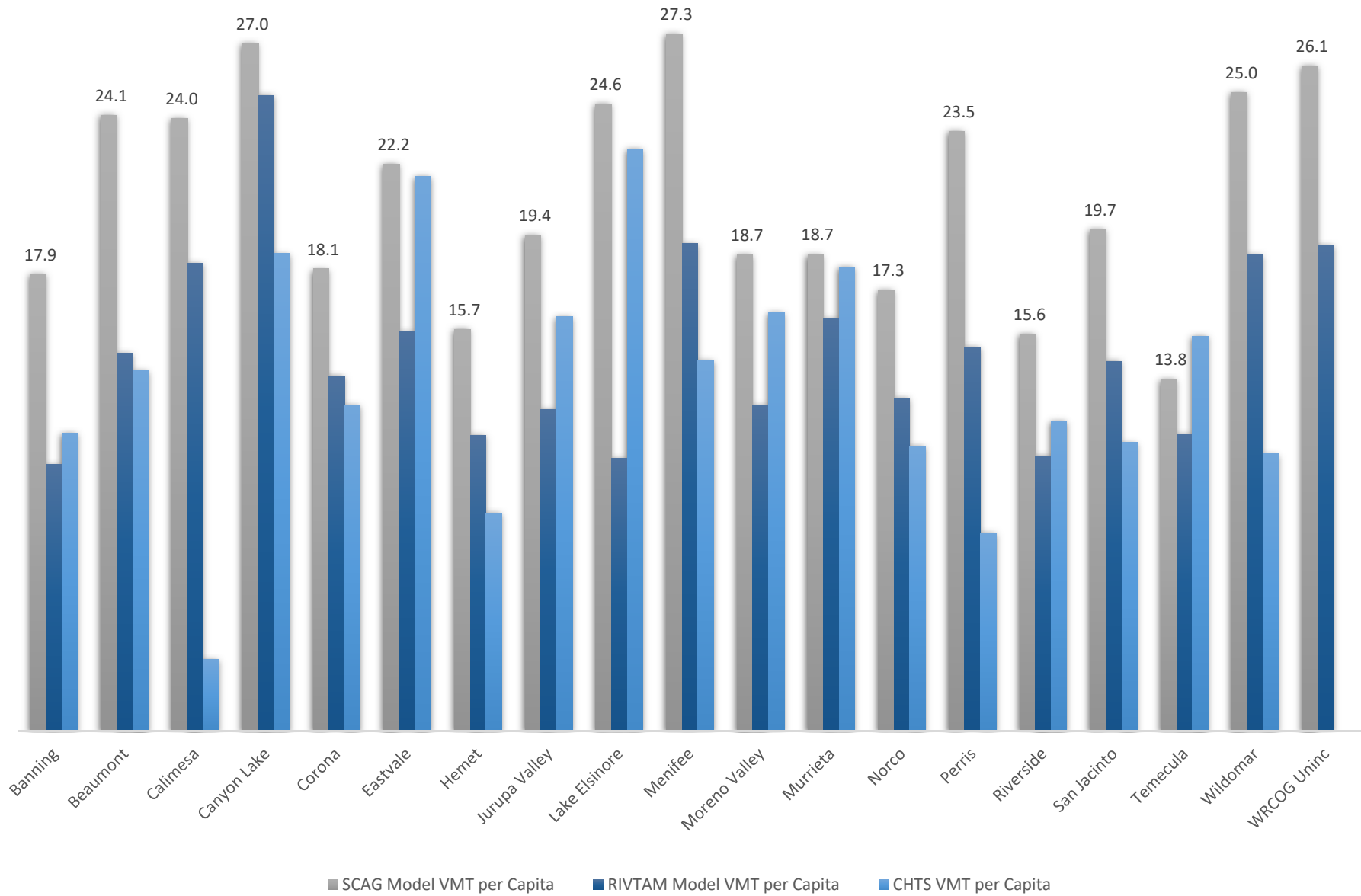


2012 Daily Total VMT per Service Population Model Comparison



DRAFT

2012 Household Generated VMT per Capita



Tools Assessment

TECHNICAL MEMORANDUM

Date: 8.20.18

To: Chris Gray (WRCOG), Chris Tzeng (WRCOG), Sarah Dominguez (SCAG), Mike Gainor (SCAG)

From: Ronald T. Milam, AICP, PTP and Jason Pack, PE

Subject: Review and Assessment of Existing Planning/Travel Demand Tools for SB 743 OC18-0567

This technical memorandum presents a review of existing sketch planning tools and travel demand forecasting models available for SB 743 VMT analysis in the WRCOG region. We identified three travel forecasting models and 11 sketch planning tools that produce VMT forecasts or test VMT reduction strategies. However, SB 743 has an additional requirement that limits which models or tools are potentially acceptable for VMT analysis. The *Technical Advisory on Evaluating Transportation Impacts in CEQA*, State of California, Governor's Office of Planning and Research, April 2018 contains the following specification for models and methodologies.

Models and methodologies used to calculate thresholds, estimate project VMT, and estimate VMT reduction due to mitigation should be comparable. For example:

- *A tour-based assessment of project VMT should be compared to a tour-based threshold, or a trip-based assessment to a trip-based VMT threshold.*
- *Where a travel demand model is used to determine thresholds, the same model should also be used to provide trip lengths as part of assessing project VMT.*
- *Where only trip-based estimates of VMT reduction from mitigation are available, a trip-based threshold should be used, and project VMT should be assessed in a trip-based manner.*

Presuming that WRCOG member agencies will rely on the RIVTAM or SCAG travel forecasting models to establish VMT thresholds, then these models (or their inputs/outputs) would need to be used for project analysis. As a result, current sketch tools would not be used to estimate VMT for SB 743 purposes. Instead, these tools would largely be used for testing VMT mitigation measures such as transportation demand management (TDM) strategies.

Travel Forecasting Models

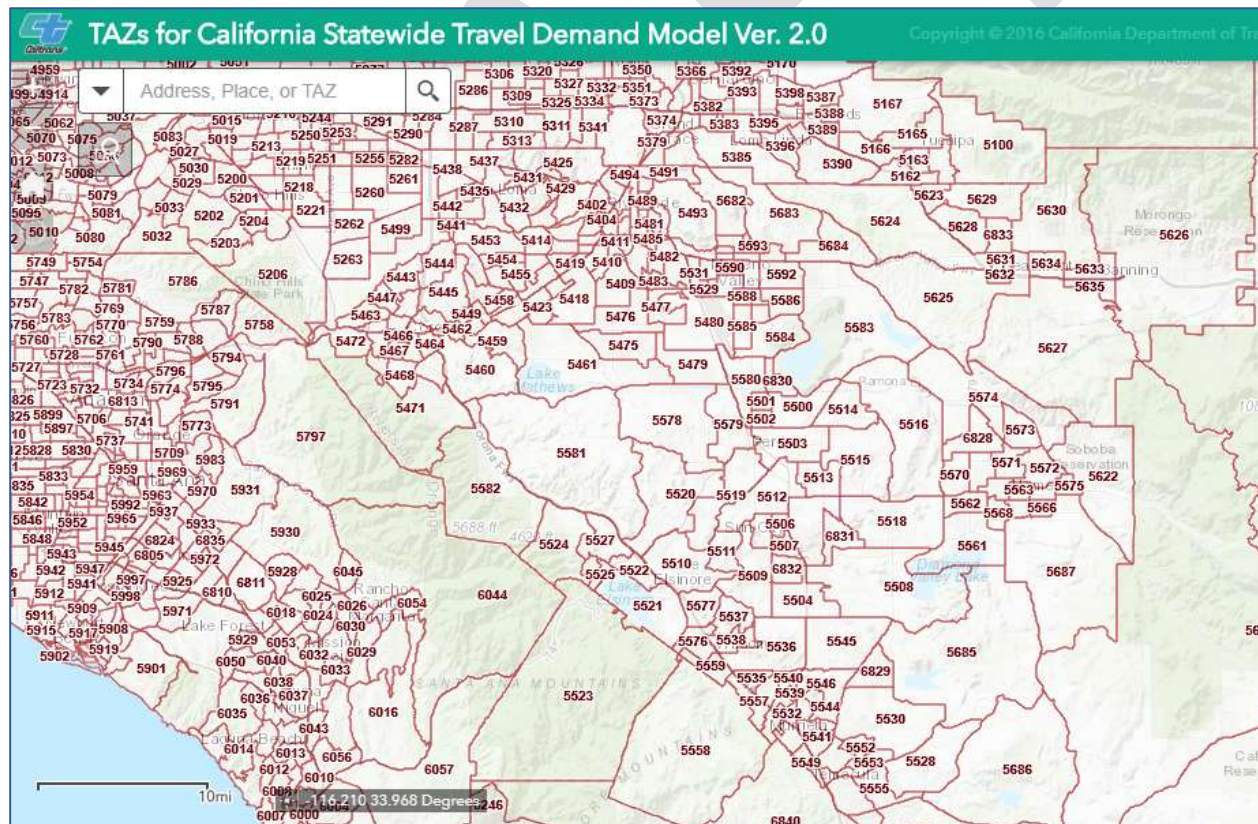
Three travel forecasting models are available for VMT forecasting in the WRCOG region including the California Statewide Travel Demand Model (CSTDm), the SCAG travel forecasting model, and the RIVAM travel forecasting model. The CSTDm was developed by Caltrans and produces passenger travel demand forecasts. Details about the model can be found at the following website.

- http://www.dot.ca.gov/hq/tpp/offices/omsp/statewide_modeling/cstdm.html

In addition, Caltrans has produced VMT output data by traffic analysis zone (TAZ) for purposes of SB 743 implementation and that data can be accessed at the following website.

- <http://www.dot.ca.gov/hq/tpp/offices/omsp/SB743.html>

As a statewide model, the level of detail for local project applications may not be sufficient to produce reasonable results since the model was not validated at a local scale. The traffic analysis zones (TAZs) are large as shown in the map excerpt below; so the resulting VMT outputs would have limited sensitivity to small scale land use projects and the influences of land use context.



SCAG has developed its own models for regional planning purposes including a trip-based model and an activity-based model (ABM). A variety of other models have also been created for specific purposes related to sub-regional modeling, heavy duty trucks, air quality, and scenario planning. As shown in the image below, SCAG is transitioning from the trip-based model, which was used for previous regional transportation plans/sustainable communities strategies (RTP/SCS) to the ABM for future versions.

The screenshot shows the 'Transportation Models' page on the SCAG website. It features a navigation bar with tabs for 'Overview', 'Trip Based', 'Activity Based', 'Subregional', 'Heavy Duty Truck', and 'Air Quality'. The 'Overview' tab is selected. Below the navigation bar, the page title 'Transportation Model' is followed by a description: 'SCAG develops and maintains state-of-the-art transportation models to support SCAG's planning program. These models include:'. A table lists five models with their primary uses:

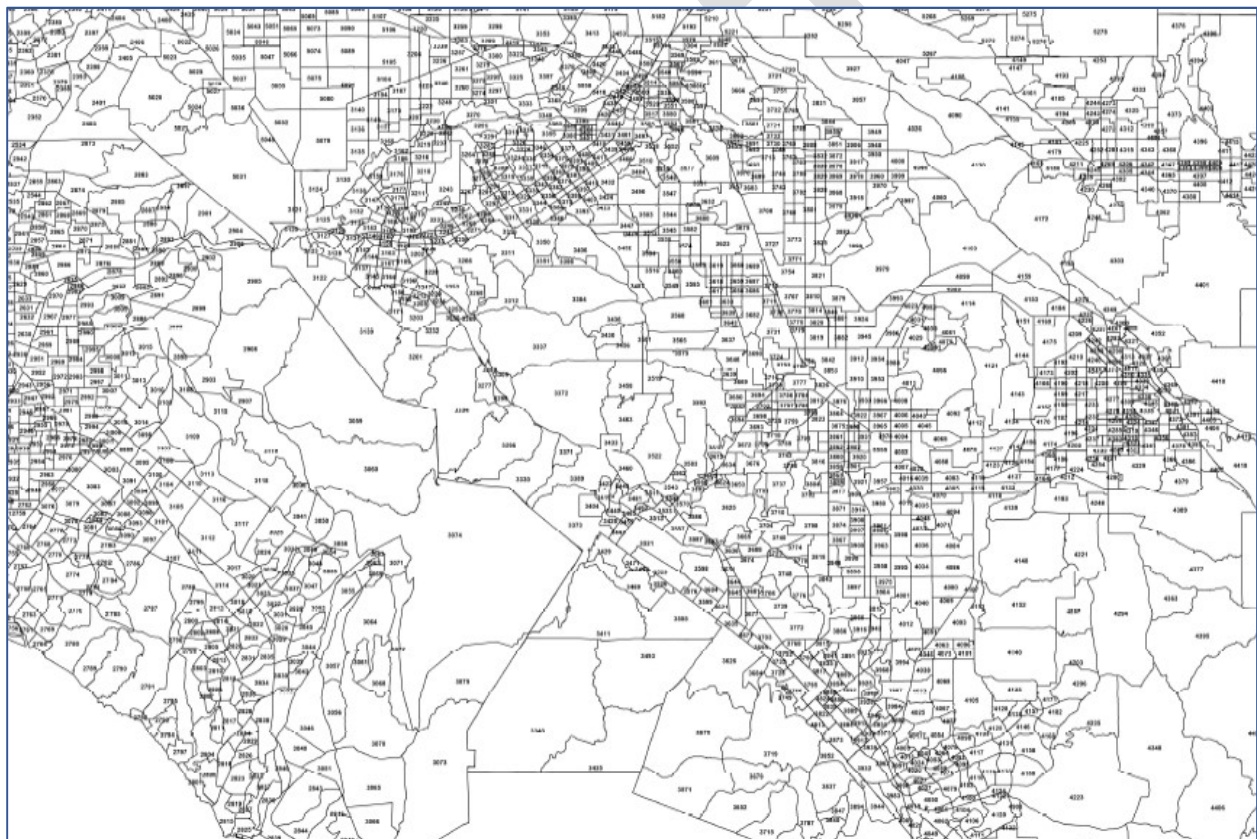
Model	Use
Trip Based Model	• Meets the Needs Through 2016
Activity-Based Model	• 2016 RTP/SCS Analysis
Subregional Modeling Tool	• Tool for Local Analysis
Heavy-Duty Truck Model	• Trucks & Goods Movement
Air Quality Model	• Conformity Determination

The SCAG trip-based and ABM model outputs can be post-processed to produce total VMT estimates at the traffic analysis zone (TAZ) level or for any aggregation of TAZs. The ABM can also produce household generated VMT estimates. These estimates are limited to trips that have origins and destinations within the model boundary. Trips to or from external model origins and destinations are not included. The models are sensitive to built-environment effects and have been calibrated and validated to represent the SCAG region as explained in the model development documentation available at the following website.

- <http://www.scag.ca.gov/DataAndTools/Pages/TransportationModels.aspx>

Since Riverside County is located at the edge of the SCAG model area, some modifications to the models may be necessary to provide a full accounting of VMT effects as recommended in the OPR Technical Advisory for SB 743 implementation. The specific modifications would be to adjust the lengths of trips entering and exiting the model boundary area to capture their full travel distance and not just the distance they travel inside the model area.

The final model evaluated is the RIVTAM travel forecasting model, which represents a sub-area version of the SCAG model. RIVTAM was completed in May 2009 and includes a 2008 base year and a 2035 forecast year. The model was designed to provide a greater level of detail and sensitivity in Riverside County compared to regional SCAG model (see image below of the current TAZ system).



As part of an update to the TUMF program, a new 2012 base year was established and the forecast year was extended to 2040. A major update of the model was started in July of 2018 and will extend into 2019. The current and updated models will be capable of producing VMT estimates for each TAZ or larger areas. To provide the full-accounting of VMT that is recommended for SB 743, the current model outputs will likely need further refinements similar to those described above for the SCAG model. The updated model is anticipated to include these changes.

Sketch Planning Tools

This review evaluated 11 sketch model tools using the following criteria. We also incorporated information from reviews conducted through academic research by UC Davis and UC Berkeley.

1. **Defensibility** – How defensible is the use of this tool in terms of the accuracy of its outputs and frequency of use by other agencies.
2. **Sensitivity** - How sensitive is to the tool to the specific land use contexts and TDM strategies (e.g., does the tool allow the user to import details related to the context surrounding the project site and the proposed TDM mitigation measures).
3. **Utility** – How easy is the tool to use to evaluate VMT and TDM strategies.

The 11 sketch model tools reviewed are listed below:

- **CalEEMod** - is a statewide computer model designed to estimate emissions of criteria air pollutant and greenhouse gas (GHG) associated with land use projects. This model also provides VMT estimates that are a part of the emissions modeling process.
- **Sketch 7** - is a spreadsheet tool that estimates percent reductions to VMT based on the 7 Ds (i.e., density, diversity, distance, design, destination, demographics, and development scale).
- **VMT Impact Tool/Salon** – is a spreadsheet tool created by Deborah Salon at UC Davis for the California Air Resources Board that quantifies how much VMT will change in response to changes in land use and transportation system variables.
- **GreenTRIP Connect** - is an online tool for residential projects that allows users to evaluate the VMT and GHG emissions of their project and to test a limited set of built-in TDM strategies.
- **MXD/MXD+** - is a mixed-use development trip generation tool developed for U.S. EPA that adjusts ITE daily trip generation estimates to reflect built environment effects. MXD+ incorporates the ITE mixed-use trip generation method to produce a.m. and p.m. peak hour trip generation estimates for mixed use projects. To estimate VMT, the trip generation results from

MXD/MXD+ must be multiplied by trip lengths from observed data or regional/local travel forecasting models.

- **UrbanFootprint (UF)** - is a scenario planning tools that produces VMT estimates relying on the MXD trip generation methodology. Trip lengths are calculated within the model but do not reflect network-based routing. SCAG uses a version of UF as part of its sketch planning model.
- **Envision Tomorrow** - is a scenario planning tool that produces VMT estimates.
- **California Smart-Growth Trip Generation Adjustment Tool** – is a spreadsheet tool that provides the number of trips generated by land use projects implementing smart growth principles.
- **TRIMMS** – is a visual basic application spreadsheet model that estimates mode share and VMT changes brought about by a number of TDM strategies.
- **VMT+** - is a web-based application that estimates VMT and emissions using ITE trip rates and user-defined trip and land use inputs.
- **TDM+** - is a spreadsheet tool that estimates the percent reduction in VMT due to the implementation of one or many different TDM strategies identified in the *Quantifying Greenhouse Gas Mitigation Measures*, CAPCOA, 2010.

The matrix in Attachment A provides a summary of the tool review. Each of the sketch models reviewed, except for the CA Smart Growth Tool and MXD/MXD+, provide direct estimates of 'project generated VMT' or calculates the percent change in VMT. None of the models are capable of fully evaluating the 'project's effect on VMT' or evaluating cumulative VMT impacts. Only CalEEMod, GreenTRIP Connect, TRIMMS, and TDM+ evaluate the impacts of TDM strategies for VMT mitigation.

Tool Recommendations for WRCOG Member Jurisdictions

According to the OPR technical advisory, the tools used to evaluate VMT must be consistent with the methodology used to determine VMT thresholds. To maintain consistency between methods and thresholds, we do not recommend use the available sketch planning tools to estimate project-generated VMT for land use projects if thresholds are based on the RIVTAM or SCAG model. However, the sketch tools may be useful for evaluating the impacts of potential TDM strategies.

If an efficiency form of VMT (VMT per service population, VMT per resident, or VMT per employee) is selected as the metric that is used to define the VMT thresholds, then we would recommend the development of a customized screening and forecasting tool (i.e., web-app). This tool would reflect the

specific transportation and land use context of the WRCOG region by relying on RIVTAM model inputs and outputs. The tool could be used for the following assessment and forecasting steps.

- Identify the TAZ associated with the project location.
- Identify the Community Region of the project, based on the project's associated TAZ.
- Determine if the project meets screening criteria related to being located within a transit priority area (TPA).
- Determine if project meets screening criteria related to being located within a low VMT generating TAZ. This step would rely on the model's base year (or baseline) estimate of the TAZ VMT per service population and would compare that value to the proposed threshold measured at the jurisdictional or a reasonable sub-regional area (i.e., WRCOG or TUMF districts).
- Provide baseline and cumulative estimates of project generated VMT if the project fails to be screened out including VMT estimates for use in other sections of CEQA analysis, such as air quality, greenhouse gases, and energy based on TAZ VMT averages.

Tool setup would include running the base year and future year scenarios of the travel demand model to obtain VMT and land use data for each TAZ, jurisdiction, and reasonable sub-region. Key features of this tool are described in Table 1.

Feature	Description	Elements	Comments
Setup inputs	Parcel boundaries, TPA boundaries, and travel demand model data required to prepare tool for use	• Parcel boundaries • TPA boundaries • Model data for each TAZ, jurisdiction, TUMF district under base year and future year conditions: ○ TUMF districts ○ Jurisdiction boundaries ○ Land use, population, employment (and possibly students) ○ Total VMT ○ Total VMT per service population	Only needs to be updated when model is updated
Project inputs	Data required for each project	• Project baseline year (year Notice of Preparation is filed) • Land use, population, employment (and possibly students) • Is project consistent with General Plan? (yes/no) • Is project consistent with RTP/SCS? (yes/no) • Does the project consist exclusively of local serving retail uses with a total project size of less than 50,000 square feet? (yes/no)	
Tool outputs	Results provided for each project	• Does project satisfy screening criteria? If yes, basis for determination • Estimated project total VMT per service population (project baseline and future years) • Estimated project total VMT (project baseline and future years)	VMT estimates based on TAZ average

For evaluating the impacts of TDM strategies for VMT mitigation, CalEEMod, GreenTRIP Connect, and TDM+ are available sketch tools, but each as potential limitations. The data supporting the VMT reductions associated with the TDM strategies in these tools is largely derived from urban areas. Their application in suburban and especially rural areas may not be valid without a detailed assessment of how the strategy is affected by the background land use context. As to individual tool limitations, GreenTrip Connect only applies to residential projects with just a few TDM strategies. CalEEMod includes the TDM strategies from *Quantifying Greenhouse Gas Mitigation Strategies*, CAPCOA, 2010, but has operational issues noted in the tool review in Attachment A that can misrepresent project generated VMT. TDM+ also includes the CAPCOA strategies plus recent ARB research documented in the “SB 743 Implementation TDM Strategy Assessment,” June 11, 2018; however, this tool is proprietary and would need to be applied through Fehr & Peers.

ATTACHMENT A – Review of Available Sketch Models

DRAFT

ATTACHMENT A: SKETCH MODEL TOOL APPLICABILITY FINDINGS

Sketch Tool	Output	Defensibility	Sensitivity	Utility	Comments	User Experience: Benefits (UC Davis ¹)	User Experience: Drawbacks (UC Davis ¹)	Conclusions (UC Berkeley ²)	Conclusion
CalEEMod	VMT	++ Widespread use by air districts. Defensibility depends on use by others due to lack of documentation for trip lengths and known calculation problems.	+ Many parameters, but limited sensitivity to land use context, requires use of mitigation function to accurately represent mixed-use or infill projects, does not directly capture internalization, and mitigation function is not current or fully sensitive to TDM strategies.	++ Requires installation, which can cause errors due to older programming (not updated since 2016). Use of the tool is relatively straightforward but use of mitigation function is often necessary to accurately represent proposed projects.	CAPCOA/Trinity Consultants product, may not be able to make changes.	Many, customizable inputs; program interface reduces back-end error.	Many, customizable inputs; defaults and land use categories may misrepresent project and/or context area.	Easier data demands; difficult to determine location attributes, especially to avoid double counting; documentation did not provide enough guidance on method selection.	Not recommended for VMT calculations but could be used for TDM mitigation evaluation.
Sketch 7	% Change in VMT	+ Household (HH) VMT only. Hasn't been updated since 2012.	+ No internalization, no TDM reduction, no trip purpose. Produces % change in VMT, generic place types.	+ Must have regional travel demand model data as input.		Straightforward inputs & interface; system-level outputs; outputs include walk, bike, and transit trips.	Spreadsheet interface can become "buggy", break; regional TAZ data used to calibrate tool may be difficult to obtain.	[Not reviewed]	Not recommended.
VMT Impact Tool/Salon	% Change in VMT	+ HH VMT only	+ No internalization, no TDM reduction, no trip purpose.	+ Not intuitive as a project analysis tool.	Scenario testing for census tract level & above; not project-level.	[Not reviewed]	[Not reviewed]	[Not reviewed]	Not recommended.
GreenTRIP Connect	VMT; Change in VMT	+ HH VMT only	+ Affordable housing, TDM credit for 4 strategies,	++ Easy to use, but limited to residential land uses.	Would need to work with TransForm.	Simple user interface; straightforward outputs.	Measures only residential travel, even in mixed-use projects.	[Not reviewed]	Not recommended for VMT calculations, but could be used for TDM mitigation evaluation. Application in rural areas may not be valid.
UrbanFootprint	VMT	++ Uses MXD for trip generation. Trip lengths not based on observed data.	++ Many parameters. Sensitive to land use changes from adjacent parcels. No TDM reduction.	+ Robust tool but requires training to learn.	California acquired licenses for all cities and counties.	[Not reviewed]	[Not reviewed]	[Not reviewed]	Not recommended.
Envision Tomorrow	VMT	+ Added parameters diluted research.	++ Many parameters. No TDM reduction.	+ Open source, complex spreadsheet tool.	Primarily scenario planning; owned by Fregonese.	[Not reviewed]	[Not reviewed]	[Not reviewed]	Not recommended.
CA Smart Growth Tool	Trips	++	+ No trip purposes, no TDM reduction.	+		Few, intuitive inputs with direction of where to find them.	Calculates trips one land use at a time, and in limited context areas; calculates trips, not VMT.	[Not reviewed]	Not recommended.
TRIMMS	VMT	++ Used by SJCOG.	++ Includes TDM reductions for employees (not LU).	+	Has a few elements that do not exist in CAPCOA.	[Not reviewed]	[Not reviewed]	[Not reviewed]	Not recommended.
MXD/MXD+	Trips	+++	++ Many parameters, no TDM reduction.	++		Simple inputs categories; straightforward outputs.	Important input data may be difficult to find.	High data input demands; obtaining data required GIS capability. ³	Not recommended.
VMT+	VMT	+ Educational Tool.	+ Limited parameters.	++ Easy to use.		[Not reviewed]	[Not reviewed]	[Not reviewed]	Not recommended.
TDM+	% Change in VMT	+++ CAPCOA-based.	++	++	Only does TDM reductions; needs to be coupled with VMT estimator. Being updated based on new TDM research from ARB Net Zero Building Feasibility Study.	[Not reviewed]	[Not reviewed]	[Not reviewed]	Could be used for TDM mitigation evaluation. Application in rural areas may not be valid.
Sources: Fehr & Peers, 2018; UC Davis, 2017; UC Berkeley, 2018. Notes: + = lowest score, +++ = highest score ¹Amy Lee, Kevin Fang, and Susan Handy; "Evaluation of Sketch-Level Vehicle Miles Traveled (VMT) Quantification Tools," National Center for Sustainable Transportation, August 2017. ²Elisa Barbour, Dan Chatman, Sarah Doggett, Stella Yip, and Manuel Santana; "SB 743 implementation: Challenges and Opportunities [Draft Final]," June 5, 2018. ³Analysis based on earlier, public spreadsheet tool; more advanced proprietary versions available.									



2. Thresholds

Thresholds Assessment

TECHNICAL MEMORANDUM

Date: 10.31.18

To: Chris Gray (WRCOG), Chris Tzeng (WRCOG), Sarah Dominguez (SCAG), Mike Gainor (SCAG)

From: Ronald T. Milam, AICP, PTP and Jason Pack, PE

Subject: SB 743 Implementation Thresholds Assessment

OC18-0567

This technical memorandum summarizes the consultant team assessment of potential VMT thresholds for land use projects and land use plans to comply with SB 743. For transportation projects, lead agencies have the discretion to select their own metrics and thresholds and no change to current practice is required. Hence, the remainder of this memo will focus on land use thresholds and is organized into four sections.

- Section 1 - Background on CEQA Thresholds
- Section 2 - OPR VMT Threshold Recommendations
- Section 3 - Lead Agency Discretion in Setting VMT Thresholds
- Section 4 - Recommendations for WRCOG member agencies

This memo was prepared with input from Remy Moose Manley. Their role focused on key questions associated with Sections 3 and 4.

Section 1 – Background on CEQA Thresholds

Establishing thresholds requires complying with the new statutes added by SB 743 as well as traditional guidance contained in CEQA Guidelines Section 15064.7 and new language being proposed as part of the *Proposed Updates to the CEQA Guidelines*, November 2017, California Governor's Office of Planning and Research (see excerpts below).

§ 15064. Determining the Significance of the Environmental Effects Caused by a Project

(a) Determining whether a project may have a significant effect plays a critical role in the CEQA process.

(1) If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, the agency shall prepare a draft EIR.

(2) When a final EIR identifies one or more significant effects, the lead agency and each responsible agency shall make a finding under Section 15091 for each significant effect and may need to make a statement of overriding considerations under Section 15093 for the project.

(b) **(1)** The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area.

(2) Thresholds of significance, as defined in Section 15064.7(a), may assist lead agencies in determining whether a project may cause a significant impact. When using a threshold, the lead agency should briefly explain how compliance with the threshold means that the project's impacts are less than significant and describe the substantial evidence supporting that conclusion. Compliance with the threshold does not relieve a lead agency of the obligation to consider substantial evidence indicating that the project's environmental effects may still be significant.

Proposed Updates to the CEQA Guidelines, July 2, 2018, California Natural Resources Agency
<http://resources.ca.gov/ceqa/>

§ 15064.7. Thresholds of Significance

(a) ~~Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects.~~ A threshold of

significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant.

(b) Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. Thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule, or regulation, and developed through a public review process and be supported by substantial evidence. Lead agencies may also use thresholds on a case-by-case basis as provided in Section 15064(b)(2).

(c) When adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.

(d) Using environmental standards as thresholds of significance promotes consistency in significance determinations and integrates environmental review with other environmental program planning and regulation. Any public agency may adopt or use an environmental standard as a threshold of significance. In adopting or using an environmental standard as a threshold of significance, a public agency shall explain how the particular requirements of that environmental standard ~~avoid~~ reduce project impacts, including cumulative impacts, to a level that is less than significant, and why the environmental standard is relevant to the analysis of the project under consideration. For the purposes of this subdivision, an "environmental standard" is a rule of general application that is adopted by a public agency through a public review process and that is all of the following:

(1) a quantitative, qualitative or performance requirement found in an ordinance, resolution, rule, regulation, order, plan or other environmental requirement;

(2) adopted for the purpose of environmental protection;

(3) addresses the environmental effect caused by the project; and,

(4) applies to the project under review.

Proposed Updates to the CEQA Guidelines, July 2, 2018, California Natural Resources Agency
<http://resources.ca.gov/ceqa/>

In summary, this threshold setting guidance emphasizes the need to use substantial evidence to help determine when a project will cause an unacceptable environmental condition or outcome. For SB 743, the specific outcome of focus is the change a project will cause in vehicle miles of travel (VMT). Since VMT is already used to determine air quality, energy, and greenhouse gas (GHG) impacts as part of CEQA compliance, the challenge for lead agencies is to answer the question, **“What type or amount of change in VMT constitutes a significant impact solely for transportation purposes?”**

Section 2 - OPR VMT Threshold Recommendations

SB 743 includes the following two legislative intent statements, which were used to help guide OPR’s VMT threshold decisions.

- 1) *Ensure that the environmental impacts of traffic, such as noise, air pollution, and safety concerns, continue to be properly addressed and mitigated through the California Environmental Quality Act.*
- 2) *More appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions.*

The threshold recommendations are found in the *Proposed Updates to the CEQA Guidelines* and the *Technical Advisory*. Specific excerpts and threshold highlights are provided below.

Proposed CEQA Guidelines Section 15064.3

(b) Criteria for Analyzing Transportation Impacts.

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.

(2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.

Technical Advisory on Evaluating Transportation Impacts in CEQA (page 8)

*Based on OPR's extensive review of the applicable research and literature on this topic, OPR finds that in most instances a per capita or per employee VMT that is **fifteen percent below that of existing development may be a reasonable threshold.***

Technical Advisory on Evaluating Transportation Impacts in CEQA – Rural Projects Outside of MPOs (page 15)

In rural areas of non-MPO counties (i.e., areas not near established or incorporated cities or towns), fewer options may be available for reducing VMT, and significance thresholds may be best determined on a case-by-case basis. Note, however, that clustered small towns and small town main streets may have substantial VMT benefits compared to isolated rural development, similar to the transit oriented development described above.

These (and the other) threshold recommendations in the *Technical Advisory* rely on the following evidence associated with the state's GHG reduction goals and targets in combination with environmental case law.

- Assembly Bill 32 (2006) requires statewide greenhouse gas reductions to 1990 levels by 2020 and continued reductions beyond 2020.
- Senate Bill 32 (2016) requires at least a 40 percent reduction in greenhouse gas emissions by 2030.
- Pursuant to Senate Bill 375 (2008), the California Air Resources Board establishes greenhouse gas reduction targets for metropolitan planning organizations (MPOs) to achieve based on land use patterns and transportation systems specified in Regional Transportation Plans and Sustainable Community Strategies. Current targets for the largest metropolitan planning organizations range from 13% to 16% reductions by 2035.
- Executive Order B-30-15 (2015) sets a GHG emissions reduction target of 40 percent below 1990 levels by 2030.
- Executive Order S-3-05 (2005) sets a GHG emissions reduction target of 80 percent below 1990 levels by 2050.
- Executive Order B-16-12 (2012) specifies a GHG emissions reduction target of 80 percent below 1990 levels by 2050 specifically for transportation.
- Senate Bill 391 requires the California Transportation Plan to support 80 percent reduction in GHGs below 1990 levels by 2050.
- The California Air Resources Board Mobile Source Strategy (2016) describes California's strategy for containing air pollutant emissions from vehicles and quantifies VMT growth compatible with achieving state targets.
- The California Air Resources Board's 2017 Climate Change Scoping Plan Update: The Strategy for Achieving California's 2030 Greenhouse Gas Target describes California's strategy for containing

greenhouse gas emissions from vehicles and quantifies VMT growth compatible with achieving state targets.

- The Caltrans Strategic Management Plan (2015) calls for a 15 percent reduction in VMT per capita compared to 2010 levels, by 2020.

Lead agencies should note that the OPR recommended VMT thresholds are almost exclusively based on GHG reduction goals. While this is one of the SB 743 legislative intent objectives, a less clear connection is made to the other legislative intent objectives to encourage infill development and promote active transportation. And, as noted above, GHG impacts are already addressed in another CEQA section.

Another important distinction within the Technical Advisory is how projects within different land use contexts are treated. The general expectation that a 15 percent reduction below that of existing development may be reasonable is proposed for projects within metropolitan planning organizations (MPOs). For rural areas outside MPOs, the Technical Advisory recognizes that VMT mitigation options are limited so thresholds may need to be set on a case-by-case basis.

The recognition that land use context matters when it comes to the potential VMT mitigation options and effectiveness is important. The MPO boundary distinction is not relevant to the feasibility of VMT mitigation. A rural or suburban area inside or outside an MPO boundary will have very similar limitations when it comes to the feasibility of VMT reduction options. As such, land use context and not MPO status should be the defining criteria for setting threshold expectations.

The *Technical Advisory* makes specific VMT threshold recommendations for analyzing the impact of project generated VMT on baseline conditions. Cumulative impacts are not directly addressed in the *Technical Advisory*. However, it does recommend that VMT analysis consider a project's long-term effects on VMT and whether the project is consistent with the applicable regional transportation plan/sustainable community strategy (RTP/SCS). These recommendations raise key questions for lead agencies addressed in the next section.

Section 3 - Lead Agency Discretion in Setting VMT Thresholds

Until SB 743, the CEQA Guidelines Section 15064.7 allowed lead agencies the discretion to select their own transportation metrics and thresholds although substantial evidence was required to support their decisions. SB 743 takes the 'metric' choice away by requiring VMT. As to thresholds, additional questions have arisen as listed below.

Question 1 - Do lead agencies have discretion to set a different VMT threshold than recommended by OPR?

Question 2 - Do lead agencies need to establish VMT thresholds for cumulative impacts?

Question 3 - Do lead agencies need to use the same VMT methodology for setting thresholds and for conducting project VMT forecasts?

The first two questions require a legal perspective, so the project team requested input from Remy Moose Manley, which is one of the most recognized law firms in California when it comes to CEQA legal issues. Their full opinion is contained in Attachment A while a summary of their findings as augmented by other project team members is presented below.

Question 1 Response – Setting a threshold lower than the 15-percent reduction recommended by OPR in their *Technical Advisory* is likely legally defensible, so long as the threshold is supported by substantial evidence. This opinion is based mainly on the fact that the 15-percent reduction is not included in the statute or the proposed CEQA Guidelines; rather it is only included in OPR's *Technical Advisory*. A reasonable interpretation of Section 21099, subdivision (e) that only allows lead agencies to set thresholds that are more protective of the environment is that it only refers to the statute itself, and perhaps also the CEQA Guidelines that the Legislature directed OPR to develop, as those are the only thresholds of significance that are referred to in the statute. Additional evidence allowing for a lower threshold is also found in the discussion above about the recognition of land use context influencing the feasibility of VMT reduction. Other substantial evidence supporting the limitations of VMT mitigation based on land use context can also be found in *Quantifying Greenhouse Gas Mitigation Measures*, CAPCOA, 2010 and upcoming updates to this information from ARB based on their [Zero-Carbon Buildings in California: A Feasibility Study](#).

Question 2 Response – Lead agencies should address VMT impacts in the cumulative context. The CEQA Guidelines (and the case law) are clear that consideration of cumulative impacts is key to CEQA compliance. That said, a separate quantitative threshold may not be required if the threshold applied for project-specific impacts is cumulative in nature. VMT thresholds based on an efficiency form of the metric such as VMT per capita, can address project and cumulative impacts in a similar manner that some air districts do for criteria pollutants and GHGs. Since VMT is a composite metric that will continue to be generated over time, a key consideration for cumulative scenarios is whether the rate of VMT generation gets better or worse in the long-term. If the rate is trending down over time consistent with expectations for air pollutant and GHGs, then the project level analysis may suffice.

For some projects, measuring project generated VMT though will only tell part of the impact story. Measuring the 'project's effect on VMT' may be necessary especially under cumulative conditions to fully explain the project's impact. This occurs because of the nature of discretionary land use decisions. Cities and counties influence land supply through changes to general plan land use designations and zoning for parcels. These changes rarely, if ever, influence the long-term amounts of regional population and employment growth. Viewed through this lens, a full disclosure of VMT effects requires capturing how a project may influence the VMT generated by the project and nearby land uses. Also, some mitigation strategies that improve walking, bicycling, or transit to/from the project site can also reduce VMT from neighboring land uses (i.e., installing a bike share station on the project site would influence the riding behavior of project residents and those living and working nearby).

Question 3 Response – Lead agencies need to use consistent methods when forecasting VMT for threshold setting and project analysis to ensure an apples-to-apples comparison for identifying potential impacts. The project team has confirmed through case study comparisons that failure to comply with this *Technical Advisory* recommendation can lead to erroneous impact conclusions.

Section 4 - Recommendations for WRCOG member agencies

So how should lead agencies approach VMT threshold setting given their discretion? Since an impact under CEQA begins with a change to the existing environment, a starting level for potential thresholds would be the baseline (i.e., existing condition) VMT, VMT per capita, VMT per employee, or VMT per service population. Since VMT will increase or fluctuate with population and employment growth, changes in economic activity, and expansion of new vehicle travel choices (i.e., Uber, Lyft, Chariot, autonomous vehicles, etc.), expressing VMT measurement in an efficiency metric form allows for more direct comparisons to baseline conditions when it comes to land use projects, land use plans, and transportation projects. Establishing a threshold such as baseline VMT per service population would be essentially setting an expectation that future land uses perform similar to existing land uses. If this is the floor, then expectations for VMT reduction can increase depending on a community's values related to vehicle use and its associated effects on mobility, economic activity, and environmental consequences. Working towards the 15-percent reduction recommended in the *Technical Advisory* becomes more feasible as the land use context becomes more urban with higher densities and high-quality transit systems. In central cities, the 15-percent reduction can be surpassed because of the close proximity of land uses and the multiple options for accessing destinations by walking, using bicycles or scooters, sharing vehicles, and using transit.

While OPR has developed specific VMT impact thresholds for project-related impacts, current practice has not sufficiently evolved where a clear line can be drawn between 'acceptable' and 'unacceptable' levels of

VMT change for the sole purpose of determining a significant transportation impact especially when considering land use context. Until SB 743, VMT changes were viewed through an environmental lens that focused on the relationship to fuel consumption and emissions. For transportation purposes, VMT has traditionally been used to evaluate whether land use or transportation decisions resulted in greater dependency on vehicle travel. Trying to determine whether a portion of someone's daily vehicle travel is unacceptable or would constitute a significant transportation impact is generally not clear to lead agencies.

Another consideration in threshold setting is how to address cumulative VMT impacts and whether addressing them in the general plan EIR is advantageous for streamlining the review of subsequent land use and transportation projects given CEQA relief available through SB 375 or CEQA Guidelines Section 15183. This section of the Guidelines relieves a project of additional environmental review if the environmental impact was adequately addressed in the general plan EIR and the project is consistent with the general plan (see below).

15183. PROJECTS CONSISTENT WITH A COMMUNITY PLAN OR ZONING

(a) CEQA mandates that projects which are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified shall not require additional environmental review, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site. This streamlines the review of such projects and reduces the need to prepare repetitive environmental studies.

The use of Section 15183 also addresses cumulative impacts as acknowledged in Section 15130(e).

15130. DISCUSSION OF CUMULATIVE IMPACTS

(e) If a cumulative impact was adequately addressed in a prior EIR for a community plan, zoning action, or general plan, and the project is consistent with that plan or action, then an EIR for such a project should not further analyze that cumulative impact, as provided in Section 15183(j).

For cities in the WRCOG region, addressing VMT impacts in general plan EIRs could be useful in understanding how VMT reduction should be balanced against other community values when it comes to setting new VMT impact thresholds for SB 743.

Given this information, lead agencies have at least four options for setting thresholds as outlined below. Under any option, the lead agency must develop its own substantial evidence to support their preferred threshold and should consider multiple perspectives. These perspectives include those from the community in general as well as specific stakeholder perspectives from the development community and environmental protection groups. A threshold that is too stringent could lead to a permanent significant and unavoidable VMT impact finding increasing the cost of environmental review for developers. Conversely, a threshold that does not result in any significant impacts could lead to missed opportunities

to reasonably reduce VMT and related environmental impacts. In either case, attracting the attention of specific stakeholder groups can lead to CEQA challenges, which are often determined based on the strength of substantial evidence supporting lead agency decisions.

OPTION 1 – Rely on the OPR Technical Advisory Thresholds

The first option is to simply rely on the threshold recommendations contained in the OPR Technical Advisory. As noted above, the general expectation is that land use projects should be measured against a 15 percent reduction below that of existing development. Specific VMT thresholds for residential, office (work-related), and retail land uses are summarized below.

- Residential projects – A proposed project exceeding a level of 15 percent below existing (baseline) VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as regional VMT per capita or as city VMT per capita.
- Office projects – A proposed project exceeding a level of 15 percent below existing (baseline) regional VMT per employee may indicate a significant transportation impact.
- Retail projects – A net increase in total VMT may indicate a significant transportation impact.

For land use plans, the general expectation is to be consistent with the RTP/SCS.

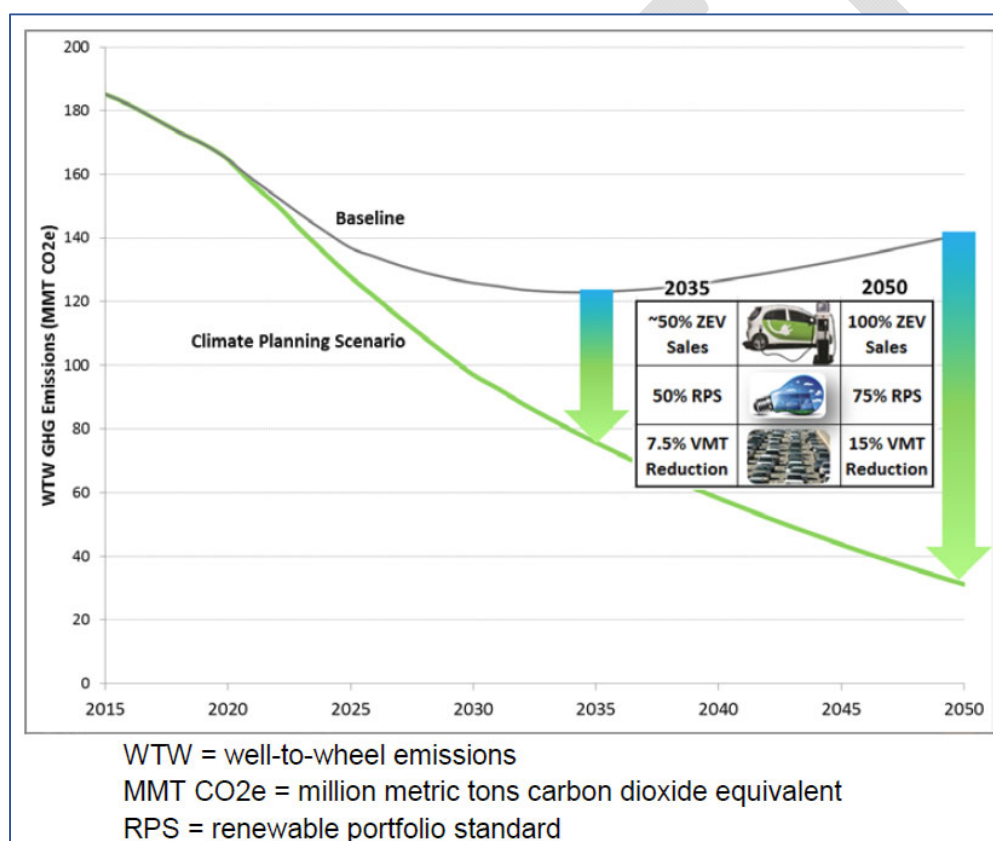
A potential limitation of the OPR recommendations is that the substantial evidence used to justify the thresholds is largely based on the state's air quality and GHG goals. Since air quality and GHG impact analysis in environmental documents should already address the influence of VMT, the thresholds do not directly reflect expectations related to the other SB 743 objectives to promote multimodal networks and mixed/infill land uses. Further, state expectations for air quality and GHG may not align with local/lead agency expectations.

OPTION 2 – Set Thresholds Consistent with Lead Agency Air Quality, GHG Reduction, and Energy Conservation Goals

This option sets a threshold consistent with a lead agency's air quality, GHG reduction, and energy conservation goals. This approach requires that local air quality and GHG reduction goals in general plans, climate action plans, or GHG reduction plans comply with the legislation and associated plans described above on pages 5 and 6. In general, most of the expectations set through legislation are related to the state's GHG reduction goals that were originally captured in EO S-3-05.

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

SB 32 expanded on these goals and added the expectation that the state should reach 40 percent below 1990 levels by 2030 followed by SB 391 that requires the California Transportation Plan to support 80 percent reduction in GHGs below 1990 levels by 2050. With respect to the land use and transportation sectors, SB 375 tasked ARB with setting specific GHG reduction goals through the RTP/SCSs prepared by MPOs. The ARB *Scoping Plan* and *Mobile Source Strategy* provide analysis related to how the state can achieve the legislative and executive goals while the Caltrans *Strategic Management Plan* and *Smart Mobility Framework* provide supportive guidance and metrics. An important recognition of the ARB *Scoping Plan* and *Mobile Source Strategy* is that the initial SB 375 targets were not aggressive enough. The state needs to achieve a reduction of 7 percent below projected 2030 VMT levels and 15 percent below projected 2050 VMT levels associated with the first round of RTP/SCSs (see chart below).



Statewide On-Road GHG Emissions

Source: https://www.arb.ca.gov/cc/sb375/final_staff_proposal_sb375_target_update_october_2017.pdf (pg. 12)

Note that the baseline trend in the chart did not consider key disruptive trends such as transportation network companies (TNCs) and autonomous vehicles (AVs) so it is possible that baseline VMT may be higher. Further, the climate planning scenario did not consider the recently issued Governor's Executive Order (EO) B-55-18 that establishes the goal to achieve carbon neutrality no later than 2045.

Consideration of these factors would increase the level of VMT reduction needed to achieve the State's climate goals.

OPTION 3 – Set Thresholds Consistent with RTP/SCS Future Year VMT Projections by Jurisdiction or Sub-Region

VMT is a composite metric that is created as an output of combining a community's long-term population and growth projections with its long-term transportation network (i.e., the general plan). Other variables are also in play related to travel behavior, but land use changes and transportation network modifications are the items largely influenced or controlled by cities and counties. As such, every city and county unincorporated area within WRCOG already has a VMT growth budget. This is the amount of VMT that is forecast to be generated from their general plans combined with other travel behavior inputs for the region as captured in the RIVTAM or SCAG regional travel forecasting models as part of regional planning and the RTP/SCS. This VMT growth has already been 'approved' by the community, the region, and the state and could serve as the basis of a VMT threshold expressed as a VMT growth budget or as a VMT efficiency metric based on the future year VMT per capita, VMT per employee, or VMT per service population. The measurement of VMT could occur at the jurisdictional or sub-region (i.e., TUMF zones) level.

Potential limitations of this approach relate to model sensitivity. If a general plan includes policies or implementation programs designed to reduce VMT through transportation demand management (TDM) strategies, the regional models did not likely include these effects. Further, current regional models do not capture major disruptive trend effects such as TNCs, AVs, and internet shopping.

OPTION 4 – Set Thresholds Based on Baseline VMT Performance

As noted above, an impact under CEQA begins with a change to the existing or baseline environment. There are a range of approaches to using this starting point for VMT impact analysis. At one end of the spectrum is 'total daily VMT' generated under baseline conditions. Setting this value as the threshold for a jurisdiction basically creates a budget where any increase would be a significant impact. Alternatively, the baseline VMT per capita, VMT per employee, or VMT per service population could be used to establish an efficiency metric basis for impact evaluation. Using this form of VMT would mean that future land use projects would be expected to perform no worse than existing land use projects and only projects that cause an increase in the rate of VMT generation would cause significant impacts. Since VMT will increase or fluctuate with population and employment growth, changes in economic activity, and expansion of new vehicle travel choices (i.e., Uber, Lyft, Chariot, autonomous vehicles, etc.), expressing VMT measurement in an efficiency metric form allows for more direct comparisons to baseline conditions when it comes to land use projects, land use plans, and transportation projects.

Please review this information and let us know if you have any follow up questions.

ATTACHMENT A

DRAFT



REMY | MOOSE | MANLEY
LLP

CONFIDENTIAL – ATTORNEY/CLIENT PRIVILEGED

M E M O R A N D U M

To: Ron Milam,
on behalf of WRCOG

From: Tiffany Wright and Jim Moose

Date: May 28, 2018

Re: Questions re Establishing Thresholds for Vehicle Miles Travelled

Introduction

You asked us two questions about the interpretation of SB 743 and its application to WRCOG's development of thresholds of significance for VMT impacts.

1. Can lead agencies (within MPO areas) set VMT thresholds lower than the 15-percent reduction recommended by OPR in their Technical Advisory?
2. Do lead agencies need to establish VMT thresholds for cumulative impacts?

These questions are addressed in turn below.

- 1. Setting a threshold lower than the 15-percent reduction recommended by OPR in their Technical Advisory is likely legally defensible, so long as the threshold is supported by substantial evidence.**

SB 743 added Section 21099 to the Public Resources Code. That section directs OPR to prepare proposed revisions to the CEQA Guidelines “establishing criteria for determining the significance of transportation impacts of projects within transit priority areas. Those criteria shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.” (Pub. Resources Code, § 21099, subd. (b).)¹

¹ Section 21099, subdivision (b) goes on to provide that “[i]n developing the criteria, the office shall recommend potential metrics to measure transportation impacts that may include, but are not limited to vehicle miles traveled, vehicle miles traveled per capita,

Your question about whether an agency could set a threshold lower than the 15-percent reduction recommended by OPR in its Technical Advisory stems from Section 21099, subdivision (e), which provides that “[t]his section does not affect the authority of a public agency to establish or adopt thresholds of significance that are more protective of the environment.”

We do not believe that subdivision (e) would preclude an agency from establishing a threshold that is lower than the 15-percent reduction recommended by OPR in its Technical Advisory. Our view is based mainly on the fact that the 15-percent reduction is not included in the statute or the proposed CEQA Guidelines; rather it is only included in OPR’s Technical Advisory. A reasonable interpretation of Section 21099, subdivision (e) is that it only refers to the statute itself, and perhaps also the CEQA Guidelines that the Legislature directed OPR to develop, as those are the only thresholds of significance that are referred to in the statute.

As discussed above the statute only generally directs that any threshold shall “promote the reduction of greenhouse gas emission, the development of mulitmoldal transportation networks, and a diversity of land uses.” Arguably then, based on the language of the statute, a quantitative threshold must be one that “promotes the reduction of greenhouse gas emissions.”

The Guideline proposed by OPR does not establish a particular threshold. Rather, it provides that “[g]enerally, vehicle miles travelled is the most appropriate measure of transportation impacts.” (Proposed CEQA Guidelines, § 15064.3, subd. (a).) For land use projects, the proposed Guideline provides that:

Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.

automobile trip generation rates, or automobile trips generated. The office may also establish criteria for models used to analyze transportation impacts to ensure the models are accurate, reliable, and consistent with the intent of this section.”

The Guidelines, for the most part, carry the weight of law. Many case treated the Guidelines as having the effective authority of duly adopted regulations.² (See *Fall River Wild Trout Foundation v. County of Shasta* (1999) 70 Cal.App.4th 482, 490 [the Legislature “expressly authorized the Secretary of the Resources Agency to develop [the Guidelines] as an aid to agency implementation of CEQA,” and they should be accorded “great weight and should be respected by the courts”]; *Lee v. City of Lompoc* (1993) 14 Cal.App.4th 1515, 1523 [“There is a strong presumption that the administrative interpretation set forth in the Guidelines is consistent with legislative intent. [Citation.] The Guidelines are to be given ‘great weight’ in interpreting CEQA statutory provisions. [Citation.]”]; *Benton v. Bd. of Supervisors* (1991) 226 Cal.App.3d 1467, 1478-1479 [“Guidelines are binding on all public agencies”; the sole function of a court in reviewing the substance of the Guidelines “is to decide whether the [Resources Agency] reasonably interpreted the legislative mandate”].)

OPR’s Technical Advisories do not carry this weight of authority, however. While OPR does provide comment periods on its Technical Advisories, they are not subject to the full regulatory process that the Guidelines are. The Technical Advisory for SB 743 itself describes the limitations on the Technical Advisory’s enforceability, describing it as “advice and recommendations, which agencies and other entities may use at their discretion.” The Technical Advisory expressly provides that “This document should not be construed as legal advice.” (OPR, SB 743 Technical Advisory, p.1.)

For these reasons, it is our opinion that an agency may adopt a threshold for VMT that is a reduction lower than the 15 percent provided in the advisory. As a practical matter, however, the Technical Advisory has created something like a presumption that a 15-percent reduction is the appropriate standard. By citing to the California Air Resources Board’s 2017 Climate Change Scoping Plan and Mobile Source Strategy, and Caltrans’s Strategic Management Plan, OPR has provided substantial evidence that the 15-percent reduction target is appropriate and feasible.

WRCOG must therefore support any change from OPR’s recommendations with substantial evidence.

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² Other cases have referred to the Guidelines as “indications or outlines to be followed, allowing for flexibility of action.” (See, e.g., *Karlson v. City of Camarillo* (1980) 100 Cal.App.3d 789, 804–805 [Guidelines are “indications or outlines to be followed, allowing for flexibility of action”].)

2. Lead agencies should address VMT impacts in the cumulative context.

In your questions to us, you noted that while OPR has developed VMT impact thresholds for project-related impacts, the current guidance does not fully address cumulative impacts. And while the document recommends consistency with the relevant RTP/SCS, the CARB's 2017 Climate Change Scoping Plan and other documents make it clear that consistency with the RTP/SCS will not be enough for the state to make its climate change goals; further reductions in VMT will be necessary.

Neither Public Resources Code section 21099, nor the proposed CEQA Guidelines mention a threshold for cumulative VMT impacts. Nevertheless, the CEQA Guidelines (and the case law) are clear that consideration of cumulative impacts is key to CEQA compliance. (CEQA Guidelines, § 15130; *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 735.)

That said, WRCOG may not need to develop separate thresholds to be used for cumulative impacts. It may be that the threshold applied for project-specific impacts is cumulative in nature. For example, the 15-percent reduction recommended by OPR in its Technical Advisory is based on meeting California's 2050 greenhouse gas goals, and it takes into account reductions achieved by other sectors. There are other examples where a project-specific threshold also addresses cumulative impacts. This is the case for many quantitative thresholds recommended by air districts for criteria pollutants. Similarly, quantitative thresholds established by some air districts for greenhouse gas emissions are generally applied at the project level and cumulative level, since these types of emissions are, by their nature, cumulative.

For these reasons, we believe that certain types of VMT thresholds (efficiency thresholds on a per capita or per service population basis) will likely satisfy any requirement to consider cumulative impacts. Other types of thresholds, such as those based on a net change in VMT, would likely require additional consideration of cumulative impacts, although that consideration may not require a specific quantitative threshold.



3. Mitigation

TDM Strategies Evaluation

TECHNICAL MEMORANDUM

Date: 6.11.18

To: Chris Gray (WRCOG), Chris Tzeng (WRCOG), Sarah Dominguez (SCAG), Mike Gainor (SCAG)

From: Ronald T. Milam, AICP, PTP and Jason Pack, PE

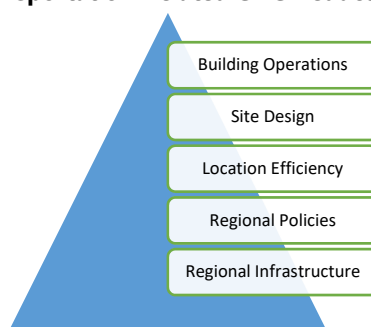
Subject: SB 743 Implementation TDM Strategy Assessment

OC18-0567

This technical memorandum summarizes our assessment of new research related to transportation demand management (TDM) effectiveness for reducing vehicle miles of travel (VMT). The purpose of this work was to compile new TDM information that has been published in research papers since release of the *Quantifying Greenhouse Gas Mitigation Measures*, CAPCOA, August 2010 and to identify those strategies suited to WRCOG jurisdictions given the rural and suburban land use context. The matrix in Attachment A summarizes the overall evaluation of all the CAPCOA strategies while the matrix in Attachment B identifies the top seven strategies suited for the study area.

This information can be used as part of the SB 743 implementation to determine potentially feasible VMT mitigation measures for individual land use projects in the WRCOG area. An important consideration for the mitigation effectiveness is the scale for TDM strategy implementation. The biggest effects of TDM strategies on VMT (and resultant emissions) derive from regional policies related to land use location efficiency and infrastructure investments that support transit, walking, and bicycling. While there are many measures that can influence VMT and emissions that relate to site design and building operations, they have smaller effects that are often dependent on final building tenants. **Figure 1** presents a conceptual illustration of the relative importance of scale.

Figure 1: Transportation-Related GHG Reduction Measures



Of the 50 transportation measures presented in the CAPCOA 2010 report *Quantifying Greenhouse Gas Mitigation Measures*, 41 are applicable at building and site level. The remaining nine are functions of, or depend on, site location and/ or actions by local and regional agencies or funders. **Table 1** summarizes the strategies according to the scope of implementation and the agents who would implement them.

TABLE 1: SUMMARY OF TRANSPORTATION-RELATED CAPCOA MEASURES

Scope	Agents	CAPCOA Strategies (see full CAPCOA list below)
Building Operations	Employer, Manager	26 total from five CAPCOA strategy groups: • 3 from 3.2 Site Enhancements group • 3 from 3.3 Parking Pricing Availability group • 15 from 3.4 Commute Trip Reduction group • 2 from 3.5 Transit Access group • 3 from 3.7 Vehicle Operations group
Site Design	Owner, Architect	15 total from three strategy groups: • 6 from 3.1 Land Use group • 6 from 3.2 Site Enhancements group • 1 from 3.3 Parking group • 2 from 3.6 Road Access group
Location Efficiency	Developer, Local Agency	3 shared with Regional and Local Policies
Alignment with Regional and Local Policies	Regional and local agencies	3 shared with Location Efficiency
Regional Infrastructure and Services	Regional and local agencies	6 total

Of these strategies, only a few are likely to be effective in a rural or suburban setting such as the WRCOG area. To help winnow the list, we reviewed how land use context could influence each strategy's effectiveness and identified the seven for more detailed review. These strategies are described in Attachment B and listed below. Please note that disruptive trends, including but not limited to, transportation network companies (TNCs), autonomous vehicles (AVs), internet shopping, and micro-transit may affect the future effectiveness of these strategies.

1. Increase diversity of land uses – This strategy focuses on inclusion of mixed uses within projects or in consideration of the surrounding area to minimize vehicle travel in terms of both the number of trips and the length of those trips.
2. Provide pedestrian network improvements – This strategy focuses on creating a pedestrian network within the project and connecting to nearby destinations. Projects in the WRCOG range in size. So the emphasis of this strategy for smaller projects would likely be the construction of network improvements that connect the project sites directly to nearby destinations. For larger

projects, this strategy could focus on the development of a robust pedestrian network within the project itself. Alternatively, implementation could occur through an impact fee program such as the TUMF or benefit/assessment district based on local or regional plans.

3. Provide traffic calming measures and low-stress bicycle network improvements – This strategy combines the CAPCOA research focused on traffic calming with new research on providing a low-stress bicycle network. Traffic calming creates networks with low vehicle speeds and volumes that are more conducive to walking and bicycling. Building a low-stress bicycle network produces a similar outcome. Implementation options are similar to strategy 2 above. One potential change in this strategy over time is that e-bikes (and e-scooters) could extend the effective range of travel on the bicycle network, which could enhance the effectiveness of this strategy.
4. Implement car-sharing program – This strategy reduces the need to own a vehicle or reduces the number of vehicles owned by a household by making it convenient to access a shared vehicle for those trips where vehicle use is essential. Note that implementation of this strategy would require regional or local agency implementation and coordination and would not likely be applicable for individual development projects.
5. Increase transit service frequency and speed – This strategy focuses on improving transit service convenience and travel time competitiveness with driving. While the WRCOG area has fixed route rail and bus service that could be enhanced, it's also possible that new forms of low-cost demand-responsive transit service could be provided. The demand-responsive service could be provided as subsidized trips by contracting to private TNCs or Taxi companies. Alternatively, a public transit operator could provide the subsidized service but would need to improve on traditional cost effectiveness by relying on TNC ride-hailing technology, using smaller vehicles sized to demand, and flexible driver employment terms where drivers are paid by trip versus by hour. This type of service would reduce wait times for travelers and improve the typical in-vehicle travel time compared to traditional transit. Note that implementation of this strategy would require regional or local agency implementation, substantial changes to current transit practices, and would not likely be applicable for individual development projects.
6. Encourage telecommuting and alternative work schedules – This strategy relies on effective internet access and speeds to individual project sites/buildings to provide the opportunity for telecommuting. The effectiveness of the strategy depends on the ultimate building tenants and this should be a factor in considering the potential VMT reduction.
7. Provide ride-sharing programs – This strategy focuses on encouraging carpooling and vanpooling by project site/building tenants and has similar limitations as strategy 6 above.

Because of the limitations noted above, strategies 1, 2, 3, 6, and 7 are initially considered the highest priorities for individual land use project mitigation subject to review and discussion with the project team and advisory committee. Please review this information and let us know if you have any follow up questions.

ATTACHMENT A

DRAFT

Comparison of CAPCOA Strategies Versus New Research Since 2010

CAPCOA Category	CAPCOA #	CAPCOA Strategy	CAPCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?	New Information Since CAPCOA Was Published in 2010		
					New information	Change in VMT reduction compared to CAPCOA	Literature or Evidence Cited
Land Use/Location	3.1.1	LUT-1 Increase Density	0.8% - 30% VMT reduction due to increase in density	Adequate	Increasing residential density is associated with lower VMT per capita. Increased residential density in areas with high jobs access may have a greater VMT change than increases in regions with lower jobs access. The range of reductions is based on a range of elasticities from -0.04 to -0.22. The low end of the reductions represents a -0.04 elasticity of demand in response to a 10% increase in residential units or employment density and a -0.22 elasticity in response to 50% increase to residential/employment density.	0.4% -10.75%	Primary sources: Boarnet, M. and Handy, S. (2014). Impacts of Residential Density on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm Secondary source: Stevens, M. (2017). Does Compact Development Make People Drive Less? Journal of the American Planning Association, 83(1), 7-18.
Land Use/Location	3.1.9	LUT-9 Improve Design of Development	3.0% - 21.3% reduction in VMT due to increasing intersection density vs. typical ITE suburban development	Adequate	No update to CAPCOA literature; advise applying CAPCOA measure only to large developments with significant internal street structure.	Same	N/A
Land Use/Location	3.1.4	LUT-4 Increase Destination Accessibility	6.7%-20% VMT reduction due to decrease in distance to major job center or downtown	Adequate	Reduction in VMT due to increased regional accessibility (jobs gravity). Locating new development in areas with good access to destinations reduces VMT by reducing trip lengths and making walking, biking, and transit trips more feasible. Destination accessibility is measured in terms of the number of jobs (or other attractions) reachable within a given travel time, which tends to be highest at central locations and lowest at peripheral ones.	0.5%-12%	Primary sources: Handy, S. et al. (2014). Impacts of Network Connectivity on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm Handy, S. et al. (2013). Impacts of Regional Accessibility on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm Secondary source: Holtzclaw, et al. (2002.) Location Efficiency: Neighborhood and Socioeconomic Characteristics Determine Auto Ownership and Use - Studies in Chicago, Los Angeles, and Chicago. Transportation Planning and Technology, Vol. 25, pp. 1-27.

Comparison of CAPCOA Strategies Versus New Research Since 2010

CAPCOA Category	CAPCOA #	CAPCOA Strategy	CAPCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?	New Information Since CAPCOA Was Published in 2010		
					New information	Change in VMT reduction compared to CAPCOA	Literature or Evidence Cited
Land Use/ Location	3.1.3	LUT-3 Increase Diversity of Urban and Suburban Developments	9%-30% VMT reduction due to mixing land uses within a single development	Adequate	1) VMT reduction due to mix of land uses within a single development. Mixing land uses within a single development can decrease VMT (and resulting GHG emissions), since building users do not need to drive to meet all of their needs. 2) Reduction in VMT due to regional change in entropy index of diversity. Providing a mix of land uses within a single neighborhood can decrease VMT (and resulting GHG emissions), since trips between land use types are shorter and may be accommodated by non-auto modes of transport. For example when residential areas are in the same neighborhood as retail and office buildings, a resident does not need to travel outside of the neighborhood to meet his/her trip needs. At the regional level, reductions in VMT are measured in response to changes in the entropy index of land use diversity.	1) 0%-12% 2) 0.3%-4%	1) Ewing, R. and Cervero, R. (2010). Travel and the Built Environment - A Meta-Analysis. Journal of the American Planning Association, 76(3), 265-294. Cited in California Air Pollution Control Officers Association. (2010). Quantifying Greenhouse Gas Mitigation Measures. Retrieved from: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf Frank, L., Greenwald, M., Kavage, S. and Devlin, A. (2011). An Assessment of Urban Form and Pedestrian and Transit Improvements as an Integrated GHG Reduction Strategy. WSDOT Research Report WA-RD 765.1. Washington State Department of Transportation. Retrieved from: http://www.wsdot.wa.gov/research/reports/fullreports/765.1.pdf Nasri, A. and Zhang, L. (2012). Impact of Metropolitan-Level Built Environment on Travel Behavior. Transportation Research Record: Journal of the Transportation Research Board, 2323(1), 75-79. Sadek, A. et al. (2011). Reducing VMT through Smart Land-Use Design. New York State Energy Research and Development Authority. Retrieved from: https://www.dot.ny.gov/divisions/engineering/technical-services/trans-r-and-d-repository/C-08-29%20Final%20Report.December%202011%20%282%29.pdf Spears, S. et al. (2014). Impacts of Land-Use Mix on Passenger Vehicle Use and Greenhouse Gas Emissions- Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm 2) Zhang, Wengia et al. "Short- and Long-Term Effects of Land Use on Reducing Personal Vehicle Miles of Travel."
Land Use/ Location	3.1.5	LUT-5 Increase Transit Accessibility	0.5%-24.6% reduce in VMT due to locating a project near high-quality transit	Adequate	1) VMT reduction when transit station is provided within 1/2 mile of development (compared to VMT for sites located outside 1/2 mile radius of transit). Locating high density development within 1/2 mile of transit will facilitate the use of transit by people traveling to or from the Project site. The use of transit results in a mode shift and therefore reduced VMT. 2) Reduction in vehicle trips due to implementing TOD. A project with a residential/commercial center designed around a rail or bus station, is called a transit-oriented development (TOD). The project description should include, at a minimum, the following design features: • A transit station/stop with high-quality, high-frequency bus service located within a 5-10 minute walk (or roughly 1/4 mile from stop to edge of development), and/or • A rail station located within a 20 minute walk (or roughly 1/2 mile from station to edge of development) • Fast, frequent, and reliable transit service connecting to a high percentage of regional destinations • Neighborhood designed for walking and cycling	1) 0%-5.8% 2) 0%-7.3%	1) Lund, H. et al. (2004). Travel Characteristics of Transit-Oriented Development in California. Oakland, CA: Bay Area Rapid Transit District, Metropolitan Transportation Commission, and Caltrans. Tal, G. et al. (2013). Policy Brief on the Impacts of Transit Access (Distance to Transit) Based on a Review of the Empirical Literature. California Air Resources Board. Retrieved from: https://www.arb.ca.gov/cc/sb375/policies/transitaccess/transit_access_brief120313.pdf 2) Zamir, K. R. et al. (2014). Effects of Transit-Oriented Development on Trip Generation, Distribution, and Mode Share in Washington, D.C., and Baltimore, Maryland. Transportation Research Record: Journal of the Transportation Research Board. 2413, 45-53. DOI: 10.3141/2413-05

Comparison of CAPCOA Strategies Versus New Research Since 2010

CAPCOA Category	CAPCOA #	CAPCOA Strategy	CAPCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?	New Information Since CAPCOA Was Published in 2010		
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Land Use/ Location	3.1.6	LUT-6 Integrate Affordable and Below Market Rate Housing	0.04%-1.20% reduction in VMT for making up to 30% of housing units BMR	Weak - Should only be used where supported by local data on affordable housing trip generation.	Observed trip generation indicates substantial local and regional variation in trip making behavior at affordable housing sites. Recommend use of ITE rates or local data for senior housing.	N/A	"Draft Memorandum: Infill and Complete Streets Study, Task 2.1: Local Trip Generation Study." Measuring the Miles: Developing new metrics for vehicle travel in LA. City of Los Angeles, April 19, 2017.
Neighborhood Site Enhancements	3.2.1	SDT-1 Provide Pedestrian Network Improvements	0%-2% reduction in VMT for creating a connected pedestrian network within the development and connecting to nearby destinations	Adequate	VMT reduction due to provision of complete pedestrian networks. Only applies if located in an area that may be prone to having a less robust sidewalk network.	0.5%-5.7%	Handy, S. et al. (2014). Impacts of Pedestrian Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm
Neighborhood Site Enhancements	3.2.2	SDT-2 Provide Traffic Calming Measures	0.25%-1% VMT reduction due to traffic calming on streets within and around the development	Adequate	Reduction in VMT due to expansion of bike networks in urban areas. Strategy only applies to bicycle facilities that provide a dedicated lane for bicyclists or a completely separated right-of-way for bicycles and pedestrians. Project-level definition: Enhance bicycle network citywide (or at similar scale), such that a building entrance or bicycle parking is within 200 yards walking or bicycling distance from a bicycle network that connects to at least one of the following: at least 10 diverse uses; a school or employment center, if the project total floor area is 50% or more residential; or a bus rapid transit stop, light or heavy rail station, commuter rail station, or ferry terminal. All destinations must be 3-mile bicycling distance from project site. Include educational campaigns to encourage bicycling.	0%-1.7%	Zahabi, S. et al. (2016). Exploring the link between the neighborhood typologies, bicycle infrastructure and commuting cycling over time and the potential impact on commuter GHG emissions. Transportation Research Part D: Transport and Environment. 47, 89-103.
Neighborhood Site Enhancements	3.2.3	SDT-3 Implement an NEV Network	0.5%-12.7% VMT reduction for GHG-emitting vehicles, depending on level of local NEV penetration	Weak - not recommended without supplemental data.	Limited evidence and highly limited applicability. Use with supplemental data only.	N/A	City of Lincoln, MHM Engineers & Surveyors, Neighborhood Electric Vehicle Transportation Program Final Report, Issued 04/05/05, and City of Lincoln, A Report to the California Legislature as required by Assembly Bill 2353, Neighborhood Electric Vehicle Transportation Plan Evaluation, January 1, 2008. Cited in: California Air Pollution Control Officers Association. (2010). Quantifying Greenhouse Gas Mitigation Measures. Retrieved from: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

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Neighborhood Site Enhancements	3.4.9	TRT-9 Implement Car-Sharing Program	0.4% - 0.7% VMT reduction due to lower vehicle ownership rates and general shift to non-driving modes	Adequate	Vehicle trip reduction due to car-sharing programs; reduction assumes 1%-5% penetration rate. Implementing car-sharing programs allows people to have on-demand access to a shared fleet of vehicles on an as-needed basis, as a supplement to trips made by non-SOV modes. Transit station-based programs focus on providing the "last-mile" solution and link transit with commuters' final destinations. Residential-based programs work to substitute entire household based trips. Employer-based programs provide a means for business/day trips for alternative mode commuters and provide a guaranteed ride home option. The reduction shown here assumes a 1%-5% penetration rate.	0.3%-1.6%	Lovejoy, K. et al. (2013). Impacts of Carsharing on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm Need to verify with more recent UCD research.
Parking Pricing	3.3.1	PDT-1 Limit Parking Supply	5%-12.5% VMT reduction in response to reduced parking supply vs. ITE parking generation rate	Weak - not recommended. Fehr & Peers has developed new estimates for residential land use only that may be used.	CAPCOA reduction range derived from estimate of reduced vehicle ownership, not supported by observed trip or VMT reductions. Evidence is available for mode shift due to presence/absence of parking in high-transit urban areas; additional investigation ongoing	Higher	Fehr & Peers estimated a linear regression formula based on observed data from multiple locations. Resulting equation produces maximum VMT reductions for residential land use only of 30% in suburban locations and 50% in urban locations based on parking supply percentage reductions.
Parking Pricing	3.3.2	PDT-2 Unbundle Parking Costs from Property Cost	2.6% -13% VMT reduction due to decreased vehicle ownership rates	Adequate - conditional on the agency not requiring parking minimums and pricing/managing on-street parking (i.e., residential parking permit districts, etc.).	Reduction in VMT, primarily for residential uses, based on range of elasticities for vehicle ownership in response to increased residential parking fees. Does not account for self-selection. Only applies if the city does not require parking minimums and if on-street parking is priced and managed (i.e., residential parking permit districts).	2%-12%	Victoria Transport Policy Institute (2009). Parking Requirement Impacts on Housing Affordability. Retrieved March 2010 from: http://www.vtpi.org/park-hou.pdf .

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Parking Pricing	3.3.3	PDT-3 Implement Market Price Public Parking	2.8%-5.5% VMT reduction due to "park once" behavior and disincentive to driving	Adequate	Implement a pricing strategy for parking by pricing all central business district/employment center/retail center on-street parking. It will be priced to encourage park once" behavior. The benefit of this measure above that of paid parking at the project only is that it deters parking spillover from project supplied parking to other public parking nearby, which undermine the vehicle miles traveled (VMT) benefits of project pricing. It may also generate sufficient area-wide mode shifts to justify increased transit service to the area. VMT reduction applies to VMT from visitor/customer trips only. Reductions higher than top end of range from CAPCOA report apply only in conditions with highly constrained on-street parking supply and lack of comparably-priced off-street parking.	2.8%-14.5%	Clinch, J.P. and Kelly, J.A. (2003). Temporal Variance Of Revealed Preference On-Street Parking Price Elasticity. Dublin: Department of Environmental Studies, University College Dublin. Retrieved from: http://www.ucd.ie/gpep/research/workingpapers/2004/04-02.pdf . Cited in Victoria Transport Policy Institute (2017). Transportation Elasticities: How Prices and Other Factors Affect Travel Behavior. Retrieved from: http://www.vtpi.org/tvm/tvm11.htm Hensher, D. and King, J. (2001). Parking Demand and Responsiveness to Supply, Price and Location in Sydney Central Business District. Transportation Research A. 35(3), 177-196. Millard-Ball, A. et al. (2013). Is the curb 80% full or 20% empty? Assessing the impacts of San Francisco's parking pricing experiment. Transportation Research Part A. 63(2014), 76-92. Shoup, D. (2011). The High Cost of Free Parking. APA Planners Press. p. 290. Cited in Pierce, G. and Shoup, D. (2013). Getting the Prices Right. Journal of the American Planning Association. 79(1), 67-81.
Transit System	3.5.3	TST-3 Expand Transit Network	0.1-8.2% VMT reduction in response to increase in transit network coverage	Adequate	Reduction in vehicle trips due to increased transit service hours or coverage. Low end of reduction is typical of project-level implementation (payment of impact fees and/or localized improvements).	0.1%-10.5%	Handy, S. et al. (2013). Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm
Transit System	3.5.4	TST-4 Increase Transit Service Frequency/Speed	0.02%-2.5% VMT reduction due to reduced headways and increased speed and reliability	Adequate	Reduction in vehicle trips due to increased transit frequency/decreased headway. Low end of reduction is typical of project-level implementation (payment of impact fees and/or localized improvements).	0.3%-6.3%	Handy, S. et al. (2013). Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm
Transit System	3.5.1	TST-1 Provide a Bus Rapid Transit System	0.02%-3.2% VMT reduction by converting standard bus system to BRT system	Adequate	No new information identified.	Same	N/A
Commute Trip Reduction	3.4.1	TRT-1 Implement CTR Program - Voluntary	1.0%-6.2% commute VMT reduction due to employer-based mode shift program	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-2 Implement CTR Program - Required Implementation/Monitoring" or with CAPCOA strategies TRT-3.4.3 through TRT-3.4.9.	Reduction in vehicle trips in response to employer-led TDM programs. The CTR program should include all of the following to apply the effectiveness reported by the literature: • Carpooling encouragement • Ride-matching assistance • Preferential carpool parking • Flexible work schedules for carpools • Half time transportation coordinator • Vanpool assistance • Bicycle end-trip facilities (parking, showers and lockers)	1.0%-6.0%	Boarnet, M. et al. (2014). Impacts of Employer-Based Trip Reduction Programs and Vanpools on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm
Commute Trip Reduction	3.4.2	TRT-2 Implement CTR Program - Required Implementation/Monitoring	4.2%-21.0% commute VMT reduction due to employer-based mode shift program with required monitoring and reporting	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or with CAPCOA strategies TRT-3.4.3 through TRT-3.4.9.	Limited evidence available. Anecdotal evidence shows high investment produces high VMT/vehicle trip reductions at employment sites with monitoring requirements and specific targets.	Same	Nelson/Nygaard (2008). South San Francisco Mode Share and Parking Report for Genentech, Inc.(p. 8) Cited in: California Air Pollution Control Officers Association. (2010). Quantifying Greenhouse Gas Mitigation Measures. Retrieved from: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

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Commute Trip Reduction	3.4.4	TRT-4 Implement Subsidized or Discounted Transit Program	0.3%-20% commute VMT reduction due to transit subsidy of up to \$6/day	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or "TRT-2 Implement CTR Program - Required Implementation/Monitoring."	1) Reduction in vehicle trips in response to reduced cost of transit use, assuming that 10-50% of new bus trips replace vehicle trips; 2) Reduction in commute trip VMT due to employee benefits that include transit 3) Reduction in all vehicle trips due to reduced transit fares system-wide, assuming 25% of new transit trips would have been vehicle trips.	1) 0.3%-14% 2) 0-16% 3) 0.1% to 6.9%	1) Victoria Transport Policy Institute. (2017). Understanding Transport Demands and Elasticities. Online TDM Encyclopedia. Retrieved from: http://www.vtpi.org/tdm/tdm11.htm 2) Carolina, P. et al. (2016). Do Employee Commuter Benefits Increase Transit Ridership? Evidence from the NY-NJ Region. Washington, DC: Transportation Research Board, 96th Annual Meeting. 3) Handy, S. et al. (2013). Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm
Commute Trip Reduction	3.4.15	TRT-15 Employee Parking Cash-Out	0.6%-7.7% commute VMT reduction due to implementing employee parking cash out	Weak - Effectiveness is building/tenant specific. Research data is over 10 years old (1997).	Shoup case studies indicate a reduction in commute vehicle trips due to implementing cash-out without implementing other trip-reduction strategies.	3%-7.7%	Shoup, D. (1997). Evaluating the Effects of Cashing Out Employer-Paid Parking: Eight Case Studies. Transport Policy. California Air Resources Board. Retrieved from: https://www.arb.ca.gov/research/apr/past/93-308a.pdf . This citation was listed as an alternative literature in CAPCOA.
Commute Trip Reduction	3.4.14	TRT-14 Price Workplace Parking	0.1%-19.7% commute VMT reduction due to mode shift	Adequate - Effectiveness is building/tenant specific.	Reduction in commute vehicle trips due to priced workplace parking; effectiveness depends on availability of alternative modes. Workplace parking pricing may include: explicitly charging for parking, implementing above market rate pricing, validating parking only for invited guests, not providing employee parking and transportation allowances, and educating employees about available alternatives.	0.5%-14%	Primary sources: Concas, S. and Nayak, N. (2012). A Meta-Analysis of Parking Price Elasticity. Washington, DC: Transportation Research Board, 2012 Annual Meeting. Dale, S. et al. (2016). Evaluating the Impact of a Workplace Parking Levy on Local Traffic Congestion: The Case of Nottingham UK. Washington, DC: Transportation Research Board, 96th Annual Meeting. Secondary sources: Victoria Transport Policy Institute. (2017). Understanding Transport Demands and Elasticities. Online TDM Encyclopedia. Retrieved from: http://www.vtpi.org/tdm/tdm11.htm Spears, S. et al. (2014). Impacts of Parking Pricing on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm
Commute Trip Reduction	3.4.6	TRT-6 Encourage Telecommuting and Alternative Work Schedules	0.07%-5.5% commute VMT reduction due to reduced commute trips	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or "TRT-2 Implement CTR Program - Required Implementation/Monitoring."	VMT reduction due to adoption of telecommuting. Alternative work schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks.	0.2%-4.5%	Handy, S. et al. (2013). Policy Brief on the Impacts of Telecommuting Based on a Review of the Empirical Literature. California Air Resources Board. Retrieved from: https://www.arb.ca.gov/cc/sb375/policies/telecommuting/telecommuting_brief120313.pdf
Commute Trip Reduction	3.4.7	1) TRT-7 Implement CTR Marketing 2) Launch Targeted Behavioral Interventions	0.8%-4.0% commute VMT reduction due to employer marketing of alternatives	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or "TRT-2 Implement CTR Program - Required Implementation/Monitoring."	1) Vehicle trips reduction due to CTR marketing; 2) Reduction in VMT from institutional trips due to targeted behavioral intervention programs	1) 0.9% to 26% 2) 1%-6%	1) Pratt, Dick. Personal communication regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies. Transit Cooperative Research Program. Cited in California Air Pollution Control Officers Association. (2010). Quantifying Greenhouse Gas Mitigation Measures. Retrieved from: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf Dill, J. and Mohr, C. (2010). Long-Term Evaluation of Individualized Marketing Programs for Travel Demand Management. Portland, OR: Transportation Research and Education Center (TREC). Retrieved from: http://pdxscholar.library.pdx.edu/usp_fac 2) Brown, A. and Ralph, K. (2017). "The Right Time and Place to Change Travel Behavior: An Experimental Study." Washington, DC: Transportation Research Board, 2017 Annual Meeting. Retrieved from: https://trid.trb.org/view.aspx?id=1437253
Commute Trip Reduction	3.4.11	TRT-11 Provide Employer-Sponsored Vanpool/Shuttle	0.3%-13.4% commute VMT reduction due to employer-sponsored vanpool and/or shuttle service	Adequate - Effectiveness is building/tenant specific.	1) Reduction in commute vehicle trips due to implementing employer-sponsored vanpool and shuttle programs; 2) Reduction in commute vehicle trips due to vanpool incentive programs; 3) Reduction in commute vehicle trips due to employer shuttle programs	1) 0.5%-5.0% 2) 0.3%-7.4% 3) 1.4%-6.8%	1) Concas, Sisinnio, Winters, Philip, Wambalaba, Francis. (2005). Fare Pricing Elasticity, Subsidies, and Demand for Vanpool Services. Transportation Research Record: Journal of the Transportation Research Board, 1924, pp 215-223. 2) Victoria Transport Policy Institute. (2015). Ridesharing: Carpooling and Vanpooling. Online TDM Encyclopedia. Retrieved from: http://vtpi.org/tdm/tdm34.htm 3) ICF. (2014). GHG Impacts for Commuter Shuttles Pilot Program.

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					New information	Change in VMT reduction compared to CAPCOA	Literature or Evidence Cited
Commute Trip Reduction	3.4.3	TRT-3 Provide Ride-Sharing Programs	1%-15% commute VMT reduction due to employer ride share coordination and facilities	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or "TRT-2 Implement CTR Program - Required Implementation/Monitoring."	Commute vehicle trips reduction due to employer ride-sharing programs. Promote ride-sharing programs through a multi-faceted approach such as: • Designating a certain percentage of parking spaces for ride sharing vehicles • Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles • Providing an app or website for coordinating rides	2.5%-8.3%	Victoria Transport Policy Institute. (2015). Ridesharing: Carpooling and Vanpooling. Online TDM Encyclopedia. Retrieved from: http://vtpi.org/tdm/tdm34.htm
Commute Trip Reduction	3.4.10	TRT-10 Implement a School Pool Program	7.2%-15.8% reduction in school VMT due to school pool implementation	Adequate - School VMT only.	Limited new evidence available, not conclusive	Same	Transportation Demand Management Institute of the Association for Commuter Transportation. TDM Case Studies and Commuter Testimonials. Prepared for the US EPA. 1997. (p. 10, 36-38) WayToGo 2015 Annual Report. Accessed on March 12, 2017 from http://www.waytogo.org/sites/default/files/attachments/waytogo-annual-report-2015.pdf
Commute Trip Reduction	3.4.13	TRT-13 Implement School Bus Program	38%-63% reduction in school VMT due to school bus service implementation	Adequate - School VMT only.	VMT reduction for school trips based on data beyond a single school district. School district boundaries are also a factor to consider. VMT reduction does not appear to be a factor that was considered in a select review of CA boundaries. VMT reductions apply to school trip VMT only.	5%-30%	Wilson, E., et al. (2007). The implications of school choice on travel behavior and environmental emissions. Transportation Research Part D: Transport and Environment 12(2007), 506-518.
Not Applicable - not a CAPCOA strategy	Not Applicable - not a CAPCOA strategy	Not Applicable - not a CAPCOA strategy	Not Applicable - not a CAPCOA strategy	Not Applicable - not a CAPCOA strategy	Bikeshare car trip substitution rate of 7-19% based on data from Washington DC, and Minneapolis/St. Paul. Annual VMT reduction of 151,000 and 57,000, respectively. Includes VMT for rebalancing and maintenance. VMT reduction of 0.023 miles per day per bikeshare member estimated for Bay Area bikeshare, utilizing Minneapolis/St. Paul data from study above.	57,000-151,000 annual VMT reduction, based on two large US cities. VMT reduction of 0.023 miles per day per member, based on one large US city estimate.	Fishman, E., Washington, S., & Haworth, N. (2014). Bike share's impact on car use: Evidence from the United States, Great Britain, and Australia. Transportation Research Part D: Transport and Environment, 31, 13-20. TDM Methodology: Impact of Carsharing Membership, Transit Passes, Bikesharing Membership, Unbundled Parking, and Parking Supply Reductions on Driving. Center for Neighborhood Technology, Peter Haas and Cindy Copp, with TransForm staff, May 5, 2016.

ATTACHMENT B

DRAFT

Relevant Strategies for Implementation in WRCOG Jurisdictions Due to Land Use Context

CAPCOA Category	CAPCOA #	CAPCOA Strategy	CAPCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?	New Information Since CAPCOA Was Published in 2010		
					New information	Change in VMT reduction compared to CAPCOA(1)	Literature or Evidence Cited
Land Use/ Location	3.1.3	LUT-3 Increase Diversity of Urban and Suburban Developments	9%-30% VMT reduction due to mixing land uses within a single development	Adequate	1) VMT reduction due to mix of land uses within a single development; 2) Reduction in VMT due to regional change in entropy index of diversity.	1) 0%-12% 2) 0.3%-4%	1) Ewing, R. and Cervero, R. (2010). Travel and the Built Environment - A Meta-Analysis. Journal of the American Planning Association, 76(3), 265-294. Cited in California Air Pollution Control Officers Association. (2010). Quantifying Greenhouse Gas Mitigation Measures. Retrieved from: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf Frank, L., Greenwald, M., Kavage, S. and Devlin, A. (2011). An Assessment of Urban Form and Pedestrian and Transit Improvements as an Integrated GHG Reduction Strategy. WSDOT Research Report WA-RD 765.1. Washington State Department of Transportation. Retrieved from: http://www.wsdot.wa.gov/research/reports/fullreports/765.1.pdf Nasri, A. and Zhang, L. (2012). Impact of Metropolitan-Level Built Environment on Travel Behavior. Transportation Research Record: Journal of the Transportation Research Board, 2323(1), 75-79. Sadek, A. et al. (2011). Reducing VMT through Smart Land-Use Design. New York State Energy Research and Development Authority. Retrieved from: https://www.dot.ny.gov/divisions/engineering/technical-services/trans-r-and-d-repository/C-08-29%20Final%20Report,December%202011%20%282%29.pdf Spears, S. et al. (2014). Impacts of Land-Use Mix on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm 2) Zhang, Wengia et al. "Short- and Long-Term Effects of Land Use on Reducing Personal Vehicle Miles of Travel."
Neighborhood Site Enhancements	3.2.1	SDT-1 Provide Pedestrian Network Improvements	0%-2% reduction in VMT for creating a connected pedestrian network within the development and connecting to nearby destinations	Adequate	VMT reduction due to provision of complete pedestrian networks.	0.5%-5.7%	Handy, S. et al. (2014). Impacts of Pedestrian Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm
Neighborhood Site Enhancements	3.2.2	SDT-2 Provide Traffic Calming Measures	0.25%-1% VMT reduction due to traffic calming on streets within and around the development	Adequate	Reduction in VMT due to building out a low-stress bike network; reduction in VMT due to expansion of bike networks in urban areas.	0%-1.7%	1) California Air Resources Board. (2016). Greenhouse Gas Quantification Methodology for the California Transportation Commission Active Transportation Program Greenhouse Gas Reduction Fund Fiscal Year 2016-17. Retrieved from: https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/ctc_atp_finalqm_16-17.pdf . 2) Zahabi, S. et al. (2016). Exploring the link between the neighborhood typologies, bicycle infrastructure and commuting cycling over time and the potential impact on commuter GHG emissions. Transportation Research Part D: Transport and Environment. 47, 89-103.
Neighborhood Site Enhancements	3.4.9	TRT-9 Implement Car-Sharing Program	0.4% - 0.7% VMT reduction due to lower vehicle ownership rates and general shift to non-driving modes	Adequate	Vehicle trip reduction due to car-sharing programs; reduction assumes 1%-5% penetration rate. Car sharing effect on VMT is still evolving due to TNC effects. UCD research showed less effect on car ownership due to car sharing participation and an uncertain effect on VMT.	0.3%-1.6%	Lovejoy, K. et al. (2013). Impacts of Carsharing on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm Clewlow, Regina R. and Mishra, Gouri Shankar, (2017). Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States. UC Davis, Institute of Transportation Studies. Research Report - UCD-ITS-RR-17-07.
Transit System	3.5.4	TST-4 Increase Transit Service Frequency/Speed	0.02%-2.5% VMT reduction due to reduced headways and increased speed and reliability	Adequate	Reduction in vehicle trips due to increased transit frequency/decreased headway.	0.3%-6.3%	Handy, S. et al. (2013). Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm

Relevant Strategies for Implementation in WRCOG Jurisdictions Due to Land Use Context

CAPCOA Category	CAPCOA #	CAPCOA Strategy	CAPCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?	New Information Since CAPCOA Was Published in 2010		
					New information	Change in VMT reduction compared to CAPCOA(1)	Literature or Evidence Cited
Commute Trip Reduction	3.4.6	TRT-6 Encourage Telecommuting and Alternative Work Schedules	0.07%-5.5% commute VMT reduction due to reduced commute trips	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or "TRT-2 Implement CTR Program - Required Implementation/Monitoring."	VMT reduction due to adoption of telecommuting	0.2%-4.5%	Handy, S. et al. (2013). Policy Brief on the Impacts of Telecommuting Based on a Review of the Empirical Literature. California Air Resources Board. Retrieved from: https://www.arb.ca.gov/cc/sb375/policies/telecommuting/telecommuting_brief120313.pdf
Commute Trip Reduction	3.4.3	TRT-3 Provide Ride-Sharing Programs	1%-15% commute VMT reduction due to employer ride share coordination and facilities	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or "TRT-2 Implement CTR Program - Required Implementation/Monitoring."	Commute vehicle trips reduction due to employer ride-sharing programs	2.5%-8.3%	Victoria Transport Policy Institute. (2015). Ridesharing: Carpooling and Vanpooling. Online TDM Encyclopedia. Retrieved from: http://vtpi.org/tdm/tdm34.htm

NOTES:

(1) For specific VMT reduction ranges, refer to the cited literature.

Mitigation Programs

TECHNICAL MEMORANDUM

Date: 11.7.18

To: Chris Gray (WRCOG), Chris Tzeng (WRCOG), Sarah Dominguez (SCAG), Mike Gainor (SCAG)

From: Ronald T. Milam, AICP, PTP and Jason Pack, PE

Subject: Assessment of VMT Mitigation Programs for SB 743

OC18-0567

This technical memorandum presents an assessment of VMT mitigation programs that could be used for SB 743 implementation in the WRCOG region. The intent of this effort is to identify an approach to mitigation that goes beyond conventional project-site transportation demand management (TDM) strategies alone. The land use and transportation context for the WRCOG region presents a challenge to the effectiveness of common TDM strategies for VMT reduction when applied at individual project sites due to limited travel choices.

The approach to the overall assessment includes two parts. The first part evaluated how VMT reduction strategies or projects could be developed or incorporated into existing funding programs such as the Transportation Uniform Mitigation Fee (TUMF) program. The purpose of incorporating VMT reduction strategies directly into existing programs is to provide greater certainty and effectiveness for VMT impact mitigation. The second part of the assessment identified potential new mitigation program concepts that may be worthy of further evaluation.

Existing Programs

Two existing programs in Riverside County connect land use development projects to transportation network improvements: the Transportation Uniform Mitigation Fee (TUMF) and the Congestion Management Program (CMP). WRCOG developed and administers the TUMF as a traditional transportation impact fee program. The program collects a fair-share fee payment from new development to contribute to the cost of a capital improvement program (CIP) consisting of long-term transportation network expansion projects identified to accommodate planned population and employment growth. The TUMF program largely focuses on roadway capacity expansion with a total program cost of \$3.76 billion. The CMP is prepared by the Riverside County Transportation Commission (RCTC). The CMP is designed to assess and monitor traffic congestion and transit performance while also

developing strategies to better manage congestion and its impacts on air quality. It includes a local land use development review component that normally occurs during the environmental review of projects. This review considers potential impacts that new land use projects may have on the CMP network. A common theme for the TUMF and CMP is that they focus on vehicle LOS as the key metric for determining deficiencies and developing CIP projects although the CMP includes a public transit element.

In their current form, the TUMF and CMP would not qualify as VMT impact mitigation programs. For the example, the TUMF CIP is largely focused on roadway capacity expansion that contributes to VMT increases. Direct evidence of the VMT increase can be found in program documentation such as the following table excerpt from the TUMF nexus study. The table includes a comparison of VMT with and without the TUMF program. The TUMF projects induce total VMT under 2040 conditions from 29,277,587 to 31,022,272.

**Table 4.6 – Regional Highway System Measures of Performance
(2012 Baseline and 2040 No-Build Scenarios to 2040 TUMF Build Scenario)**

Measure of Performance*	Peak Periods (Total)		
	2012 Baseline	2040 No-Build	2040 Build
VMT - Total ALL FACILITIES	19,532,437	29,277,587	31,022,272
VMT - FREEWAYS	11,019,155	14,487,570	13,411,377
VMT - ALL ARTERIALS	8,513,282	14,790,016	17,610,895
TOTAL - TUMF ARTERIAL VMT	5,585,202	9,089,495	9,902,433
VHT - TOTAL ALL FACILITIES	575,154	1,361,907	1,180,647
VHT - FREEWAYS	296,542	736,433	530,849
VHT - ALL ARTERIALS	278,611	625,474	649,797
TOTAL TUMF ARTERIAL VHT	181,151	396,981	354,639
VHD - TOTAL ALL FACILITIES	175,765	739,075	489,238
VHD - FREEWAYS	117,430	502,549	312,669
VHD - ALL ARTERIALS	58,334	236,527	176,569
TOTAL TUMF ARTERIAL VHD	45,080	172,944	114,833
VMT LOS E - TOTAL ALL FACILITIES	6,188,644	16,966,992	14,299,498
VMT LOS E - FREEWAYS	4,532,703	10,156,363	8,982,566
VMT LOS E & F - ALL ARTERIALS	1,655,941	6,810,629	5,316,932
TOTAL TUMF ARTERIAL VMT w/ LOS E or worse	1,462,061	5,160,911	3,735,762
% of TUMF ARTERIAL VMT w/ LOS E or worse	26%	57%	38%

* Based on RIVTAM 2012 network provided by Riverside County Transportation Department and SCAG 2016 RTP/SCS SED with updated 2015 arterial network completed by WSP, September 2016.

NOTES:

Volume is adjusted by PCE factor

VMT = vehicle miles of travel (the total combined distance that all vehicles travel on the system)

VHT = vehicle hours of travel (the total combined time that all vehicles are traveling on the system)

VHD = vehicle hours of delay (the total combined time that all vehicles have been delayed on the system based on the difference between forecast travel time and free-flow (ideal) travel time)

LOS = level of service (based on forecast volume to capacity ratios).

LOS E or Worse was determined by V/C ratio that exceeds 0.9 thresholds as indicated in the Riverside County General Plan.

Despite this VMT increase, the TUMF program does include some transit, bicycle, and pedestrian projects that could contribute to VMT reduction. For example, the following table from the TUMF Nexus Study identifies specific transit projects that are included in the program.

Table 4.3 - Unit Costs for Transit Capital Expenditures

Component Type*	Cost Assumptions as published October 18, 2002	Cost Assumptions per 2009 Nexus Update October 5, 2009	Cost Assumptions per 2015 Nexus Update	Description
Transit Center 1			\$6,000,000	Relocation/expansion of existing Regional Transit Center with up to 14 bus bays and park and ride
Transit Center 2	\$6,000,000	\$5,655,000	\$9,000,000	New Regional Transit Center with up to 14 bus bays and park and ride
Transfer Facility			\$1,000,000	Multiple route transfer hub
O & M Facility			\$50,000,000	Regional Operations and Maintenance Facility
Bus Stop	\$10,000	\$27,000	\$40,000	Bus Stop Amenities Upgrade on TUMF Network
BRT Service Capital	\$540,000	\$550,000	\$60,000	BRT/Limited Stop Service Capital (per stop**)
Vehicle Fleet 1			\$155,000	Medium Sized Bus Contract Operated
Vehicle Fleet 2	\$325,125	\$550,000	\$585,000	Large Sized Bus Directly Operated
COA Study			\$950,000	Comprehensive Operational Analysis Study component of Nexus Study Update

* Transit Cost Component Types were restructured as part of the 2015 Nexus Update in accordance with the RTA Comprehensive Operational Analysis (January 2015)

** BRT Service Capital Cost Assumption was based on a per mile unit in 2009 Nexus Update. 2016 Nexus Update uses a per stop unit cost for BRT Service Capital

If the transit, bicycle, and pedestrian projects were separated into a stand-alone CIP with a supporting nexus study based on VMT reduction, then a new VMT fee program could be developed that is dedicated to VMT impact mitigation. This could be a new program implemented by WRCOG or individual jurisdictions. An example of this type of program has been developed the City of Los Angeles as part of their Coastal Transportation Corridor Specific Plan and West Los Angeles Transportation Improvement and Mitigation Specific Plan. Details are provided at the following website.

<http://www.westsidemobilityplan.com/ctcspwla-timp-final-eir/>

The nexus relies on VMT reduction and the nexus study is included as Appendix B in the Draft EIR link on the website.

It may also be possible for a development project applicant to fully fund a transit, bicycle, or pedestrian project from the TUMF as an alternative to paying the fee directly. The TUMF program currently allows fee credits for development that expedites and completes TUMF-identified projects (most recently exhibited by the development funding the Cajalco Interchange project). Using this option requires inclusion of the mitigation in a development agreement or an EIR.

The CMP program could also be adapted to blend the congestion management objectives with VMT reduction. The current focus is to expand roadway capacity to address vehicle LOS deficiencies. This approach does not reduce congestion (i.e., travel speeds do not increase). Instead, expanding roadway capacity in congested areas induces new vehicle travel that diminishes congestion relief benefits and generates new VMT and emissions. Refer to the following websites for more research information and technical details.

- http://www.dot.ca.gov/newtech/researchreports/reports/2015/10-12-2015-NCST_Brief_InducedTravel_CS6_v3.pdf
- https://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_brief.pdf
- <https://trrjournalonline.trb.org/doi/abs/10.3141/2653-02>

Managing and reducing demand could accomplish the CMP goal especially by focusing on reducing peak period VMT. The main source of congestion as defined by the CMP is that vehicles move too slow (i.e., peak period speeds are lower than posted speed limits). This definition of congestion describes a symptom and fails to recognize that peak period travel consists of vehicles with poor seat utilization caused by not managing demand more effectively and mispricing travel demand. The existing roadway network has a limited capacity and this capacity is routinely filled up during peak periods in Riverside County by vehicles with solo drivers (i.e., low seat utilization). Further, limited facilities exist that prioritize travel by high occupancy vehicles. Increasing vehicle speeds and reducing delays substantially requires much greater seat utilization in existing vehicles (i.e., private vehicles and public transit). This change would also reduce VMT. Hence, refocusing the CMP on the combination of congestion management and VMT reduction would result in a different CIP that could qualify as VMT impact mitigation.

New Mitigation Program Concepts

Beyond the conventional programs described above are two new concepts that are not currently available in Riverside County. For purposes of this study, these programs are defined as follows.

- **VMT Mitigation Exchange** – An exchange program is a concept where VMT generators can select from a pre-approved list of mitigation projects that may be located within the same jurisdiction or possibly from a larger area. The intent is to match the project's needed VMT

reduction with a specific mitigation project of matching size and to provide evidence that the VMT reduction will reasonably occur.

- **VMT Mitigation Bank** – A mitigation bank is intended to serve as an entity or organization that pools fees from development projects across multiple jurisdictions to spend on larger scale mitigation projects. This concept differs from the more conventional impact fee program approach described above in that the fees are directed to a few larger projects that have the potential for a more significant reduction in VMT and the program is regional in nature.

As these new mitigation program concepts are still evolving, the specific descriptions and elements of the programs will likely change. The first resource document to describe and assess these programs was recently published by U.C. Berkeley and is entitled, "[Implementing SB 743, An Analysis of Vehicle Miles Traveled Banking and Exchange Frameworks](#)," The University of California Institute of Transportation Studies, October 2018. This document is a useful starting place for a dialogue about these programs.

The findings of the report are supportive of these concepts noting the following about the reasoning for their consideration.

Yet while methods for reducing VMT impacts—such as mileage pricing mechanisms, direct investments in new public transit infrastructure, transit access subsidies, and infill development incentives—are well understood, they may be difficult in some cases to implement as mitigation projects directly linked or near to individual developments. As a result, broader and more flexible approaches to mitigation may be necessary. In response, state and local policy makers are considering the creation of mitigation “banks” or “exchanges.” In a mitigation bank, developers would commit funds instead of undertaking specific on-site mitigation projects, and then a local or regional authority could aggregate these funds and deploy them to top-priority mitigation projects throughout the jurisdiction. Similarly, in a mitigation exchange, developers would be permitted to select from a list of pre-approved mitigation projects throughout the jurisdiction (or propose their own), without needing to mitigate their transportation impacts on-site. Both models can be applied at a city, county, regional, and potentially state scale, depending on local development patterns, transportation needs and opportunities, and political will.

This reasoning is important for lead agencies in the WRCOG area because mitigating VMT impacts on a project-by-project basis is challenging especially in suburban and rural land use contexts where travel choices are limited. That said, the UCB report and research conducted for this study identified the following key challenges with these types of programs.

- Challenges for Mitigation Exchanges
 - Potential mismatch between funds and mitigation projects available
 - Potential for reduced oversight of project selection
 - Difficulty in verifying VMT reductions and their sustainability especially with VMT generation changing over time due to disruptive transportation trends such as transportation network companies (TNCs) and autonomous vehicles (AVs)
 - Difficulty in demonstrating an essential nexus
 - Potential opposition to mitigation not directly occurring in the project impact area especially if impacts are concentrated in or near disadvantaged communities and the mitigation occurs in more affluent areas
- Challenges for Mitigation Banks
 - Increased need to conduct careful CEQA/Mitigation Fee Act analysis
 - Accounting challenge in delay from fee payment to project funding
 - Greater need for program administration budget
 - Political difficulty in distributing mitigation projects and coordinating across jurisdictions
 - Difficulty in verifying VMT reductions and their sustainability especially with VMT generation changing over time due to disruptive transportation trends such as transportation network companies (TNCs) and autonomous vehicles (AVs)
 - Difficulty in demonstrating an essential nexus
 - Potential opposition to mitigation not directly occurring in the project impact area especially if impacts are concentrated in or near disadvantaged communities and the mitigation occurs in more affluent areas

Another important element for either of these concepts is to have an entity that is responsible for establishing, operating, and maintaining the program. This is a potential role for a sub-regional or regional entity especially for programs that would extend mitigation projects beyond individual jurisdictional boundaries. A key part of 'operations' is that the entity will need the capability to provide verification of the VMT reduction performance and to adjust the program projects over time. Whether the entity is regional or sub-regional is another important consideration. A sub-regional entity could help minimize potential concerns about mitigation not occurring near the project site or in the same community,

The potential desire for VMT Mitigation Exchanges or Banks may depend on how lead agencies and developers respond to the initial implementation of SB 743 currently schedule to go into effect July 1, 2020. If many projects are found to have significant VMT impacts and problems occur with finding feasible mitigation measures for individual projects, then interest may grow for more program-based mitigation.

Summary

To help understand the full range of VMT impact mitigation and their particular benefits and challenges, Table 1 provides a high-level summary comparison.

DRAFT

Table 1 – Summary of VMT Impact Mitigation Options			
Mitigation Option	Description	Benefits	Challenges
No feasible action	This option recognizes that feasible mitigation is not available due to the land use or transportation context.	- Recognizes the limitations of VMT impact mitigation when alternatives to driving are not reasonably available.	Could result in more significant and unavoidable (SAU) impacts that require an EIR instead of a negative declaration.
Change project	This option would tend to focus on changing built environment characteristics of a project such as its land use density or diversity to reduce vehicle travel.	- Mitigation may not require long-term monitoring (see substantial evidence summarized in the <i>SB 743 Implementation TDM Strategy Assessment Technical Memorandum dated 6.11.18</i>). - Mitigation reduces VMT (and other vehicle travel) in immediate vicinity of the project site.	Project applicants may resist land use or other built environment changes due to financial concerns and market feasibility.
TDM	This option relies on strategies to reduce vehicle travel through incentives and disincentives often tied to the cost and convenience of vehicle travel.	- Mitigation reduces VMT (and other vehicle travel) in immediate vicinity of the project site. - Multiple mitigation strategies to choose from such that a project applicant may find co-benefits from the strategies also serving as project amenities.	- Mitigation monitoring required because effectiveness depends on building tenants, which can change over time. As a result, impacts will remain SAU. - Creates potential financial equity issues between existing and new land uses. Existing land use with TDM mitigation will have lower operating costs.

Table 1 – Summary of VMT Impact Mitigation Options

Mitigation Option	Description	Benefits	Challenges
Impact fee program	This option requires developing a new impact fee program with a nexus based on VMT reduction. This type of nexus would allow the fee program capital improvement program (CIP) to include transit, bicycle, pedestrian and other types of projects that can demonstrate VMT reduction effectiveness.	- Provides clear expectations for developers about the VMT mitigation costs. - Increases funding for VMT reduction projects such that larger and more effective projects may be implemented. - May result in greater levels of VMT reduction compared to project-by-project mitigation.	- Requires lead agency to develop stakeholder support and funding to create and maintain the fee program. - Mitigation (e.g., CIP projects) may not occur in immediate vicinity of the project site where impacts of vehicle travel will be most directly felt by neighbors.
Mitigation bank/exchange	This option matches VMT generators with VMT reducers within or beyond jurisdictional boundaries through a third party.	- Could create mitigation options that may not otherwise be available or feasible. - Not limited to jurisdictional boundaries. - Could create incentive for new innovative mitigation ideas.	- Requires an entity capable of operating and maintaining the program with the ability to verify VMT reductions. - Mitigation may not occur in immediate vicinity of the project site where impacts of vehicle travel will be most directly felt by neighbors.
General plan coverage	This option would address VMT impacts through a general plan update or amendment EIR and rely on CEQA Guidelines Section 15183 for subsequent project streamlining (as summarized in the <i>SB 743 Implementation Thresholds Assessment Technical Memorandum dated 10.31.18</i>).	- Addresses VMT reduction expectations in consideration of other jurisdictional objectives. - Offers a wider range of mitigation options than at the project-scale. - For subsequent projects consistent with the general plan, additional VMT impact analysis would not be required.	- General plan updates or amendments require substantial time and funding commitments.

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