ENVIRON

January 16, 2009

Mr. Doug Ito
California Air Resources Board
1001 I Street
P.O. Box 2815
Sacramento, CA 95812

Subject: Preliminary GDC Comments on the CEQA Threshold Guidelines

Dear Mr. Ito:

Since June 2008, ENVIRON has represented the Green Developer's Coalition (GDC) on the South Coast Air Quality Management District (SCAQMD) California Environmental Quality Act (CEQA) Greenhouse Gas (GHG) threshold working group. The GDC consists of a group of developers that believe that large master planned communities can balance employment, housing, and shopping for new population centers, and can help meet California's sustainability and GHG emissions goals.

ENVIRON is submitting comments on the California Air Resources Board's (ARB's) process to develop Greenhouse Gas Thresholds of Significance under CEQA on the behalf of the GDC member companies**.**

While the GDC supports the development of a unified approach to GHG thresholds, they will have tremendous impact on the CEQA process in California. Although they are only advisory, they will likely be adopted or used by many, if not most, lead agencies in California for residential and commercial projects. Accordingly, they should be developed in a thoughtful and reasoned manner, where stakeholder input is solicited and considered.

We cannot comment fully on the proposals that ARB submitted, because we have only little information on the rationale that ARB used in developing these proposals. Despite repeated requests, we have received limited information. Nonetheless, we are submitting preliminary comments based on our current understanding of the basis of ARB's proposals. We look forward to receiving information from ARB that will allow us to comment fully on these proposals.

In the context of the GDC, we are providing comments only on the commercial and residential aspects of the regulations.

Comments

Our preliminary comments address the following points in the order that they were presented in ARB's December 9th presentation:

1. There should be no quantitative threshold to determine significance
2. ARB should provide the basis for how each performance standard relates to California's overall climate change goals as well as how each measure listed relates to these overall goals

3. An alternative compliance method (ACM), similar to that in Title 24, should be provided that gives credit for a per unit reduction of GHG emissions across categories
4. We need additional information on how the recycling goals were developed
5. Include materials usage reduction as an option for the recycling goals
6. There must be an exclusion for demolition recycling for asbestos contaminated materials or lead based paint
7. We need additional information on the feasibility and cost-effectiveness of the building energy efficiency goals
8. More information on water use goals should be provided
9. Recycled water usage should be considered to be water use reduction
10. We support the waste management goals
11. The VMT thresholds have only been demonstrated in urban areas with small households
12. The ARB should identify goals for each type of community: urban, suburban, and exurban/rural as supported by literature
13. URBEMIS predictions of VMT can be inconsistent with the Holtzclaw data
14. VMT predictions are highly sensitive to numerous subjective aspects
15. We support the development of PDFs to reduce VMT as an alternative to quantitative thresholds
16. For commercial transportation, we support the development of TDM program attributes to support the reduction of employee trips by 20%

Details on these areas follow.

1. There should be no quantitative threshold to determine significance

The significance threshold for commercial and residential projects should not specify a quantitative threshold for the project. The ARB has asked for a rationale for specific quantitative thresholds. We can see no rationale for <u>any</u> quantitative threshold that can be supported by scientific review of significance for GHG emissions. Setting an absolute numerical cap will discourage large-scale smart and regionally planned sustainable development and may, in fact, encourage piecemeal and uncoordinated smaller leapfrog development.

The inclusion of a numerical cap will produce further disincentives to smart coordinated growth by increasing the likelihood of routine Statement of Overriding Considerations for large projects. Project applicants and lead agencies for large-scale developments will face an inevitable significant and unavoidable determination, no matter what project design features are included. If there are guaranteed significant impacts for all large developments, the likelihood of routine Statements of Overriding Considerations increases, and the impact of these significance thresholds decreases, if there is no potential for a large development to have less than significant emissions of GHGs. This reduces the incentive to incorporate state-of-the-art low carbon features in order to remain below a level of significance.

2. ARB should provide the basis for how each performance standard relates to California's overall climate change goals as well as how each measure listed relates to these overall goals

It is possible to tie normalized[1] GHG emissions to specific California GHG goals. As such, the GDC requests that ARB outline the general basis for rationale that underlie their significance findings. For instance, are these performance goals an attempt to comply with AB 32? If so, do these goals assume that all sectors will be required to achieve the same reductions by 2020? Note that recent Office of Public Research draft guidance also states "[a] lead agency should consider the following, where applicable, in assessing the significance of impacts from greenhouse gas emissions, if any, on the environment:

> (1) The extent to which the project could help or hinder attainment of the state's goals of reducing greenhouse gas emissions to 1990 levels by the year 2020 as stated in the Global Warming Solutions Act of 2006. A project may be considered to help attainment of the state's goals by being consistent with an adopted statewide 2020 greenhouse gas emissions limit or the plans, programs, and regulations adopted to implement the Global Warming Solutions Act of 2006."

Once this goal is defined, ARB should then show how each of the performance goals is consistent with the overarching California GHG reduction goal. The GDC realizes that quantifying the goals for each subgroup (recycling, traffic, etc) is difficult, and may even be speculative given the available scientific evidence and the complexity of accounting for 'embodied' GHG emissions. Regardless, the ARB has chosen specific goals and should provide the rationale for choosing the specified measures in relation to the overarching GHG emissions reductions by subgroup (recycling, traffic, etc).

3. An alternative compliance method (ACM), similar to that in Title 24, should be provided that gives credit to GHG emission reductions for a per unit reduction of GHG emissions across categories

The GDC requests that ARB give individual projects the option of showing that their project, overall, complies with the overarching goals as defined by ARB. The GDC requests that projects be allowed to quantify their baseline GHG emissions according to the baselines defined for each category (as requested above) in an effort to reduce the project's GHG intensity to the ARB-defined reduction goal. Although a comment in ARB's December 9th presentation (slide 12) alludes to this, we request that you clarify this, and state the option of using alternative mechanisms clearly, along with the goal. This approach is similar to the ACM method allowed in Title 24 where certain green design features can be used to offset other desired design features. In Title 24, this may be using more energy efficient windows to offset a large west-facing window that allows the residents to enjoy the sunset. For CEQA purposes, this may take the form of building more energy-efficient homes to offset the additional GHGs incurred by using state-of-the-art new (non-recycled) energy-efficient building materials.

4. We need additional information on how the recycling goals were developed

Although ENVIRON was able to find some information[2,3] on the feasibility of the stated recycling goals, we were unable to easily find information on the general overall costs incurred by using

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[1] Per dwelling unit or per square foot of commercial space, for example.

[2] The California Green Buildings Code provides a link to the California Integrated Waste Management Board website that lists vendors for recycled materials. http://www.ciwmb.ca.gov/RCP/Product.asp?VW=CAT&CATID=257

these levels of recycled materials. ARB must provide additional information on the costs and feasibility of achieving the recycling goals. This is a critical piece of information given the emphasis in AB 32 on cost effective implementation.

In addition, we are seeking information as to why the recycling goal was based on cost for building materials, but volume (but not weight) for roadway parking lot, sidewalk, and curb materials.

5. Include material use reduction as an option for the recycling goals

Although the GDC commends ARB for including both recycled and reused materials, the GDC requests the option of reducing the amount of materials used be included – this addition would complete the green mantra "reduce, reuse, recycle". If developers can show that they have used some percentage less material per square foot of building area (or road or sidewalk, etc) than the existing housing stock (for example), developers should be able to count this reduction toward whatever percentage goal is eventually adopted.

6. There must be an exclusion for demolition recycling for asbestos containing materials or lead based paint

Certain demolition materials contain lead based paint, or asbestos. Both of these materials need to be handled appropriately to protect public health and safety, and both are highly regulated. These (and other potentially hazardous materials) must be excluded from the recycling goals set by ARB. If an exclusion for hazardous materials is not included, these recycling goals would make infill projects, where older buildings that include hazardous materials are prevalent, more difficult to implement, and would thereby frustrate clear State policy favoring and incentivizing such development.

7. We need additional information on the costs for the energy efficiency goals

The energy efficiency goals are taken from the California Energy Commission's (CEC) voluntary Tier II Energy Efficiency standards. As there is a new Title 24 standard that will be taking effect in 2009, there is limited information on the costs that compliance with this previously voluntary standard will entail. Please provide such cost information to allow the appropriate assessment of this standard.

8. More information on meeting water use goals should be provided

The water use goals specify a reduction of 20% for indoor water use and 50% from outdoor water use below that specified by the application of the methodology in the California Green Building Code Sections 603.2 and 604.2. Please provide information and case studies about how this can be achieved and whether the fixtures and methodologies are available to attain this goal. Furthermore, information on the costs associated with meeting these goals should be provided.

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[3] At least three LEED case studies have claimed the use of 20% recycled materials.

9. Recycled water usage should be considered to be water use reduction

Rather than simply minimizing water use, the re-use of water should be considered for credit towards the proposed thresholds. Water re-use can include the use of grey water for irrigation, but can also include water reclamation facilities located in communities. Such water re-use decreases substantially the energy use associated with water delivery and use, and can contribute to the reduction of GHG emissions.

10. We support the waste management goals

We believe that the waste management goals as described in Slide 18 of the December 9th presentation are appropriate and should be adopted.

11. The VMT thresholds have only been demonstrated in urban areas with small households

The proposed ARB thresholds are intended to be applicable across the entire state, for both urbanized and non-urbanized environments, and for housing types that include housing for families, as well as for single people or couples. While low-vehicle miles travelled (VMT) communities have been demonstrated in highly urbanized areas in households with few people, as discussed below, there is little evidence that low-VMT communities can be achieved in less urbanized areas across the state with a wide range of housing types that accommodate California's diverse families, both large and small. Accordingly, the VMT threshold as written will effectively make development of single family housing, in areas outside the urban core, significant by definition.

During the December 9th meeting, Ms. Lezlie Kimura stated that Holtzclaw[4] demonstrated that VMT as low as 13,500 per household had been achieved. ENVIRON reviewed the study which analyzed 28 communities near San Francisco, Los Angeles, Sacramento and San Diego.

Importantly, no urban areas with populations lower than 2.0 million people were included in this study[5]. Of those 28 communities analyzed in 1990, five reported VMT per household below 14,000 (in order of increasing VMT): North Beach in San Francisco; Central City in Sacramento; San Francisco (excluding North Beach); Central Berkeley; and Beverly Hills. Each of these communities is within a highly urbanized area.

Furthermore, although the number of people per household in the 28 communities studied varied from a low of 1.86 people per household (Santa Monica) to a high of 3.39 (Moreno Valley in Greater Los Angeles), the highest number of people per household in the sub-14,000 VMT households was 2.36 (San Francisco, exclusive of North Beach). Holtzclaw acknowledges the correlation between household size and VMT, but equivocally dismisses it[6]. Figure 1 shows the correlation of household size and VMT in the 28 communities studied.

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[4] Holtzclaw, Using Residential Patterns and Transit to Decrease Auto Dependence and Costs, June 1994

[5] Los Angeles-Long Beach–Santa Ana population (as of 2007) is 12.92 million; San Francisco Bay Area estimated population (as of 2008) of 7.62 million; San Diego estimated population (as of 2007) is 2.94 million; and Sacramento estimated population (as of 2007) is 2.2 million. http://en.wikipedia.org/wiki/List_of_urbanized_areas_in_California_(by_population)

[6] Holtzclaw (1994) states, "While all of the other variables, including household income and household size, were statistically significant predictors of observed driving behavior when considered individually, they failed to be significant when the effects of density and transit were considered first. This result may be due to limitations in the

The methods used to determine VMT are prone to inaccuracies, particularly in more wealthy communities. In order to determine VMT, Holtzclaw used odometer readings taken during California's mandatory biennial auto emissions (smog check) inspections. While it is not clear from the study exactly how he used that data, it should be noted that smog checks are only required for automobiles that are six years old, or older. Accordingly, it would be difficult, if not impossible to use this information to understand VMT for automobiles less than six years old. As a result, for higher-income communities where fewer automobiles are six years old or more, the data would not be reflective of most drivers in those areas.

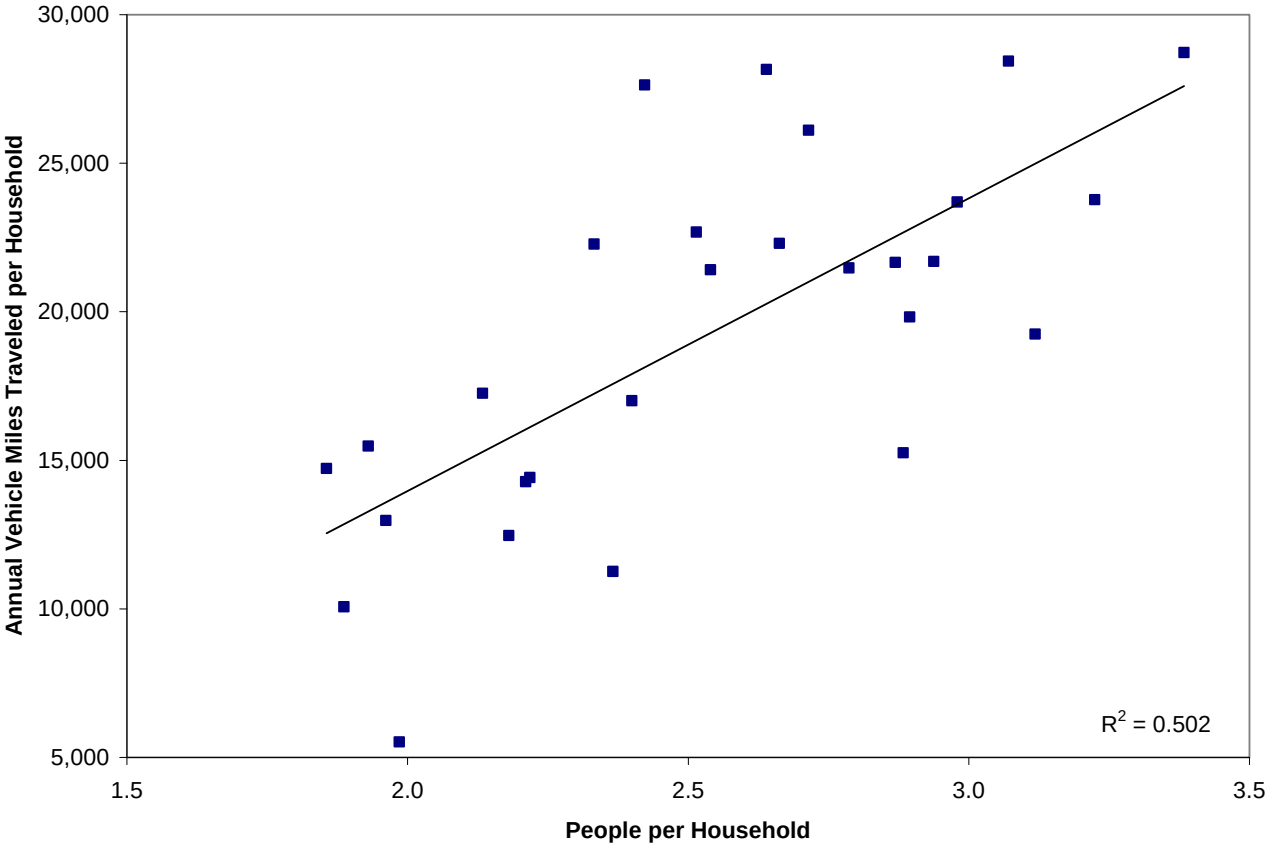

Figure 1. Vehicle miles traveled versus average household size for 28 Californian communities, based on data by Holtzclaw (1994). The average people per household was estimated by dividing total population by number of households

Furthermore, as discussed in the next section below, this demonstration was made using real VMT from information from smog checks, and not as estimated using URBEMIS, or other methods. Real VMT can not be obtained for proposed developments. The typical methods used to estimate VMT for new developments such as some combination of URBEMIS and traffic models will not necessarily provide results consistent with actual mileage travelled.

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sample size. They may also be due to the correlation between the other neighborhood characteristics and the two with the most explanatory power".

Additionally, ARB should provide evidence that the measured and calculated VMT for individual communities, if applied to the whole of California, match with California-wide fuel purchase records or other data that ARB uses to calculate the transportation-sector GHG inventory. A reasonable match on these data is necessary, although not sufficient, to demonstrate that the VMT per dwelling unit estimates and goals are reasonable and appropriate.

12. The ARB should identify goals for each type of community: Urban, Suburban, and Exurban/Rural as supported by literature.

The other piece of literature that ARB reported using to support its statement that 14,000 VMT per dwelling unit was attainable was an ARB study[7] that described how smart growth could reduce VMT in urban, suburban, and exurban/rural environments. This document states, "[t]he most significant finding of this research study is that it is possible to develop recommendations for combinations of transportation-related land use strategies that are based on quantified data available from actual communities in California and that are applied separately to urban, suburban, and exurban communities [emphasis added]." The document goes on to specify different strategies for different types of communities, with different resulting VMT outcomes for different communities. Yet, ARB chose to apply a single VMT value for its significance threshold. If VMT thresholds are to be used, and we do not recommend it as the sole solution, then ARB should provide VMT thresholds for all three types of communities described in the research. In this manner, a range of housing that can meet California's needs, can be built utilizing low carbon design.

13. URBEMIS predictions of VMT can be inconsistent with the Holtzclaw data

During the December 9th ARB meeting, Ms. Jamesin Rodgers noted that URBEMIS runs had been completed to confirm that low-VMT developments could be built. Although ARB was asked repeatedly to supply these runs, they declined. Accordingly, ENVIRON conducted URBEMIS runs to understand the correlation between URBEMIS runs and the Holtzclaw data, upon which the ARB is basing its conclusion that a 14,000 VMT development has been demonstrated. .

ENVIRON compared the VMT data for four towns presented by Holtzclaw (1994) to URBEMIS estimates for Beverly Hills, Lafayette, Moreno Valley, and San Francisco's North Beach/Nob Hill/Russian Hill area (Table 1). For all the URBEMIS estimates ENVIRON employed default urban trip lengths, the pass-by trip correction, and the local serving retail trip rate mitigation option. Site-specific residential densities and bus service information were obtained from the 1994 Holtzclaw report. Values for other factors that influence trip mitigation were obtained from publicly available reports or estimated from aerial maps (see Table A1 of the Attachment).

[7] ARB, Transportation-Related Land use Strategies to Minimize Motor Vehicle Emissions: An Indirect Source Research Study, June 1995, Contract No. 92-348

Table 1. Comparison of 1990 Annual VMT data to URBEMIS VMT estimates for four cities.

Location	URBEMIS estimated annual VMT per household	1990 annual VMT per household (Holtzclaw, 1994)	% Difference in estimated/actual VMT per household
SF North Beach/Nob Hill/Russian Hill	6,761	5,519	23
Beverly Hills	18,388	12,972	42
Lafayette	23,170	22,299	4
Moreno Valley	26,450	28,721	-8

Note: All URBEMIS estimates include the pass-by trip correction and the local service retail mitigation option.

Although the VMT estimates are within 10% for some of the cities evaluated, the URBEMIS runs do not always correlate well with Holtzclaw's data. For instance, URBEMIS overestimates VMT for Beverly Hills by over 40%. This finding is particularly concerning because the URBEMIS estimate incorrectly characterizes Beverly Hills as exceeding the proposed significance threshold of 14,000 VMT.

Additionally, for the North Beach area, URBEMIS tends to over estimate VMT per household. This overestimate may have been caused by inadequate information provided in the Holtzclaw paper to properly assess the housing/jobs balance in the area. As such, ENVIRON used the 'best-case' housing jobs balance in an attempt to bound the possible North Beach numbers. With the best case, the URBEMIS estimate is within 1% of the Holtzclaw predicted VMT; however, this best case job/housing value is likely not actually representative of North Beach. Therefore, the North Beach URBEMIS runs over-predict VMT between 1 and 23%. In addition, this points to the difficulty of selecting correct parameters for the URBEMIS model, and the substantial differences that parameter variation cause. This is further discussed below.

14. VMT predictions include numerous subjective aspects

The total annual vehicle miles traveled (VMT) per household is the product of two factors: trip rate (number of passenger vehicle trips per household per year) and trip length (miles per trip). Changes in either of the parameters directly and proportionally impact the VMT estimation. Due to the subjectivity of these two parameters, the overall VMT can be more reflective of lead agency policy than actually predictive of the VMT in the new development. In the URBEMIS runs above, note that ENVIRON did not adjust the trip lengths – only the trip rates.

The trip rate data is typically taken from the Institute of Traffic Engineers (ITE) Trip Generation Manual, and is incorporated into a traffic study typically overseen by lead agency, often incorporating comments by Caltrans. Depending on the policies of the lead agencies, the trip rate can be higher than that recommended by URBEMIS, based on the density of the development. In addition, it is widely acknowledged that the trip rate, even as modified for a number of factors, does not incorporate all the information that truly impacts trip rate.

The trip length is similarly subjective. Some lead agencies prefer to use URBEMIS defaults, whereas other lead agencies require that trip lengths be based on traffic studies where the rate of trip internalization (is a trip local to the general area or does it go to a larger metropolitan area) drives the trip length. Because the trip internalization rate drives the assessment of traffic impacts, it is our understanding that some agencies tend to requires that the models conservatively estimate capture rate (i.e., under-predict internal trips in order to ensure sufficient freeway capacity), thus overestimating trip length for developments.

Due to the uncertain and subjective assessment of VMT for new developments, the use of a VMT cap at 14,000 is an effectively arbitrary level and likely unattainable for a vast majority of projects. We recommend a project design feature (PDF) approach as outlined below to ensure consistency and transparency between projects and analyses.

15. We support the development of PDFs to reduce carbon emissions related to transportation as an alternative to quantitative VMT thresholds

As noted above, the development of VMT estimates using standard planning models such as URBEMIS is highly dependent on two very uncertain variables: trip number per dwelling unit and trip length. In addition, there are other uncertain parameters that drive URBEMIS results. In addition, as discussed above, URBEMIS doesn't include other important parameters, and doesn't necessarily reflect actual VMT.

Rather than let the substantial uncertainties drive the planning process, we recommend that ARB develop project design features, appropriate for communities that are urban, suburban, and exurban/rural, that will reflect the most recent understanding of low-carbon design. In addition, there may also be project design features which can reduce carbon emissions related to transportation, in comparison to other types of community design. These PDFs should be tied to actual GHG reduction goals as discussed earlier in this letter. Furthermore, the GHGs generated by public transit should also be considered to ensure that what appears to be low-carbon design, is truly low carbon design.

If a community could incorporate designated low-carbon project design features, then it would not result in significant GHG emissions from traffic. Considerations for these types of project design features might be mixes of residential and neighborhood serving retail, proximity to transit and jobs,[8] development along transit corridors, pedestrian- and bike-friendly development, connectedness, and density. There are several examples of the use of these types of features, such as LEED-ND, as well as literature studies. These project design features can be appropriately designed for urban, suburban, and exurban/rural development to allow for low-carbon development throughout California for all Californians. In addition to VMT reduction measures, the GDC requests that measures that would allow more efficient travel (PHEV docking stations for instance) be allowed to offset the GHG emissions associated with not implementing certain PDF's outlined above.

[8] In calculating project reductions, consideration should be given to the carbon emissions associated with various types of mass transit.

16. For commercial transportation, we support the development of TDM program attributes to support the reduction of employee trips by 20%

While we support TDM programs to reduce employee trips by 20% at commercial locations of a specific size, we also recommend the development of a list of program attributes for such a program. Otherwise, the tracking that would need to accompany such a program could be burdensome.

Closing

We appreciate the opportunity to comment on the process involved in the development of the CEQA Thresholds of Significance, and look forward to a real dialog supported by information used to develop these thresholds.

Sincerely,

Shari Beth Libicki, Ph.D.
Global Air Quality Practice Area Leader

cc: Kurt Kaperos
Mary Nichols

Attachment A: Parameter for the Urbemis Modeling of Four Cities

A T T A C H M E N T A

Parameter for the Urbemis Modeling of Four Cities

Attachment A

Table A1. Parameter values used for URBEMIS modeling of four cities.

Location	County[1]	Residential Density (households per residential acre)[2]	Buses per hour[2]	% of Streets with sidewalks on both sides[3]	Intersection density (per square mile)[4]	Jobs-to-housing ratio
SF North Beach / Nob Hill / Russian Hill	San Francisco	110	90	100	1,300	3.3 [5]
Beverly Hills	Los Angeles	14.3	13	100	700	3.8 [6]
Lafayette	Contra Costa	2.3	11	50	560	1.0 [7]
Moreno Valley	Riverside	3.7	0.4	50	365	1.0 [8]

Notes:

1. URBEMIS default trip lengths differ among counties.

2. Data obtained from: John Holtzclaw. 1994. "Using Residential Patterns and Transit to Decrease Auto Dependence and Costs", Tables 3 and 6. Available at: http://www.smartgrowth.org/library/cheers.html

3. Assumed percentages based on Holtzclaw (1994), which states that North Beach and Beverly Hills have near ubiquitous sidewalks, while Moreno Valley and Lafayette have a minority of streets with sidewalks.

4. "Intersections" are the number of line ends at each road intersection (i.e. a four-way road intersection would have four "intersections"). Intersection density was estimated using aerial photographs (Google Maps).

5. Total jobs in North Beach/Nob Hill/Russian Hill estimated by multiplying number of total acres for North Beach/Nob Hill/Russian Hill by number of local serving jobs (retail and service sectors) per total acre for Nob Hill, Russian Hill, Chinatown, North Beach, Telegraph Hill and Fisherman's Wharf in San Francisco (1988 data). The jobs/household ratio was estimated by dividing estimated jobs in North Beach/Nob Hill/Russian Hill by total households in North Beach/Nob Hill/Russian Hill. Data obtained from Tables 1 and 3 of Holtzclaw (1994).

6. Jobs/Household ratio for the City of Beverly Hills in 2005. Obtained from: City of Beverly Hills. 2008. "Beverly Hills General Plan, Public Draft." August. Available at: http://www.beverlyhills.org/civica/filebank/blobdload.asp?BlobID=3802

7. Jobs/Housing ratio for Lafayette in 2000. Obtained from: Association of Bay Area Governments. 2003. "Demographic & Employment Forecasts: Population, Residential and Job Growth in the IRP Region of Alameda, Contra Costa, San Joaquin, Santa Clara and Stanislaus Counties." June. Available at: http://www.abag.ca.gov/planning/interregional/pdf/projections/IRP_Projections-Contra_Costa_County.pdf

8. Projected jobs/housing ratio for Moreno Valley in 2010. Obtained from: LSA Associated, Inc. 2006. "Municipal Service Review for the Central Valleys, The Pass Area, and Southwestern Riverside County Areas." September. Available at: http://www.lafco.org/opencms/MSR/MSR-CentralValley_Pass_Southwestern_Final/September2006FinalDraft/2.0_Population_and_Growth.pdf