FEHR PEERS

Memorandum

Date: December 3, 2021

To: Jacob Armstrong and Damon Davis, County of San Diego

From: Katy Cole, Jon Stanton

Subject: Affordable Housing and SB 743 VMT – Screening Considerations

SD21-0407

Purpose

The Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) offers recommendations to screen affordable housing, indicating that it is presumed to have a less than significant transportation vehicle miles traveled (VMT) impact. The Technical Advisory (Page 14-15) states:

> *Adding affordable housing to infill locations generally improves jobs-housing match, in turn shortening commutes and reducing VMT. Further, "… low-wage workers in particular would be more likely to choose a residential location close to their workplace, if one is available." In areas where existing jobs-housing match is closer to optimal, low income housing nevertheless generates less VMT than market-rate housing. Therefore, a project consisting of a high percentage of affordable housing may be a basis for the lead agency to find a less-than-significant impact on VMT.* ***Evidence supports a presumption of less than significant impact for a 100 percent affordable residential development (or the residential component of a mixed-use development) in infill locations. Lead agencies may develop their own presumption of less than significant impact for residential projects (or residential portions of mixed use projects) containing a particular amount of affordable housing, based on local circumstances and evidence.*** *Furthermore, a project which includes any affordable residential units may factor the effect of the affordability on VMT into the assessment of VMT generated by those units.*

The purpose of this memo is to evaluate affordable housing trip generation using available data sources and County specific data collection to understand if affordable housing in the County generates less trips than market-rate housing. If affordable housing generates less traffic than market-rate housing, then it also generates less VMT than market-rate units in the same location.

This memo determines the difference in trip rates between affordable housing units and market-rate units within the County of San Diego and offers options to consider related to screening affordable housing from VMT impact analysis.

Data Review

Recent evidence shows affordable housing developments produce fewer vehicle trips and therefore lower VMT than equivalent market-rate developments (Clifton et al., 2018). With Senate Bill (SB) 743 determining California Environmental Quality Act (CEQA) transportation impacts through VMT generation, it is important to quantify the reduction in vehicle trips and VMT of affordable housing units to reduce or eliminate their need to mitigate VMT-related impacts for CEQA. This streamlining would support the development of additional affordable housing and reduce VMT.

Our research reviews trip generation studies at existing affordable housing developments. The data is compiled from existing research and national standards and also includes trip generation counts taken at affordable housing developments within the unincorporated areas of San Diego County.

Trip Generation refers to vehicle trips starting and ending at a particular location or land use for a set duration. A trip generation rate (for housing) is the number of trips beginning or ending at a particular location for a particular time divided by the number of units in the development. For purposes of this study, we primarily reviewed typical weekday daily trip generation where available. In some cases, AM and PM peak commute hour data is also provided. All trip generation rates are shown as the number of trips (for the study time period) per housing unit.

We reviewed the following data sources to assist with understanding trip generation characteristics for affordable housing projects:

- *Caltrans Study: Affordable Housing Trip Generation Strategies and Rates* (Clifton, Et. All, September 2018) – This study was conducted for Caltrans and reviewed and summarized data collected in the Bay Area and in Los Angeles for affordable housing projects.
- City of Los Angeles' *Infill and Complete Streets: Capturing VMT Impacts & Benefits Pursuant to CEQA* Study (2017) – This study includes data collection at 42 affordable

housing sites. The affordable housing locations were 100% affordable and were grouped based on proximity to transit (Transit Priority Area [TPA] or non-TPA) and housing type (Family, senior, special needs, or permanent supportive). Counts were conducted in 2016.

- Institute of Transportation Engineers (ITE) Trip Generation Manual – The ITE Trip Generation manual is a collection of data collected throughout the United States to reflect hundreds of different land uses. The most recent edition of the Trip Generation Manual (Edition 11, September 2021) includes affordable housing as a land use category that was studied. This is the first time affordable housing data has been provided in the ITE Trip Generation Manual.

Caltrans Study: Affordable Housing Trip Generation Strategies and Rates

Clifton, et al (2018) studied trip generation rates for affordable housing developments, using three different sources of data including traditional on-site trip generation, household transportation surveys, and Caltrans Household Travel Survey (HTS) data. For the household transportation survey portion, surveys were mailed to residents of affordable housing developments, and for the Caltrans HTS data, sample data was chosen for households who would qualify for affordable housing, but not necessarily be currently living in affordable housing units. Study periods matched ITE peak AM and PM periods. **Table 1** provides a summary of the peak hour trip generation rates reviewed in the study.

Table 1: Caltrans Study: Affordable Housing Trip Generation Strategies and Rates Trip Generation Summary

Land Use Category	Trip Generation Rate Per Dwelling Unit		
	Daily Rate	AM Peak Hour Rate	PM Peak Hour Rate
Affordable Housing	Not Available*	0.53	0.40

Notes: * Daily trip generation rates were not reported in the Clifton, et al (2018) study. Typically, the daily trip generation rate is approximately 8-12% of the peak hour rate, which would result in a daily rate of 4.4 to 5 daily trips using the AM peak hour rate reported in the study.
Source: Clifton, et al, 2018

Los Angeles Study

Fehr and Peers conducted a local trip generation study in 2016 as part of the City of Los Angeles' *Infill and Complete Streets: Capturing VMT Impacts & Benefits Pursuant to CEQA* study. Fehr & Peers collected counts for 42 affordable housing sites, 23 market-rate sites, nine mixed-use sties, and one office site. The affordable housing locations were selected to fit the following criteria: 100% affordable, isolatable use (standalone developments for non mixed-use sites), countable

driveways, and successful development (economically healthy, mature development context), and permission of property owners.

For the affordable housing sites, Fehr and Peers conducted 24-hour video counts at driveways and overnight parking utilization sweeps. The 42 locations were grouped based on proximity to transit (Transit Priority Area[1] [TPA] or non-TPA) and housing type (family, senior, special needs, or permanent supportive). Family affordable housing sites are designed for households with children.

Results showed that trip generation for affordable housing developments of all types during all time periods (Daily, AM peak, PM peak) were lower than ITE trip generation rates for market-rate apartments. Affordable housing for seniors, people with special needs, and permanent supportive housing are substantially lower than both the ITE trip generation rates and family affordable housing trip generation rates. Trip generation rates for sites located inside TPAs are generally lower than sites outside TPAs.

Table 2 summarizes the trip generation for the most relevant locations and categories which are presumed to be outside of TPAs. The LA "outside TPA" category is most comparable to the unincorporated County for present conditions, as well as under the scenario that transit options are enhanced in the more urbanized unincorporated communities as envisioned under regional planning efforts. The research collected for the LA study inside TPAs represent land use dense locations such as downtown LA that are not characteristic of land use patterns in the unincorporated areas of the County.

Table 2: Los Angeles' Affordable Housing Trip Generation Summary

Land Use Category	Trip Generation Rate Per Dwelling Unit		
	Daily Rate	AM Peak Hour Rate	PM Peak Hour Rate
All Affordable Housing Categories (Outside TPA)	2.48	0.25	0.24
All Family Housing Categories (Outside TPA)	4.15	0.55	0.43

Source: Fehr & Peers.

[1] TPAs as it relates to the LA Affordable Housing Study are areas defined by the Southern California Association of Governments (SCAG) as being within ½ mile of an existing major transit stop (a stop with either a rail station or intersection of 2 or more major bus routes with peak service frequency of 15 minutes or less). For the LA Affordable Housing Study study, a ½ mile walkshed was used in lieu of a ½ mile radius.

ITE Trip Generation Manual, 11th Edition

The 11th Edition of the ITE Trip Generation Manual provides trip generation rates for affordable housing units in addition to trip generation rates for market-rate units.

Table 3 summarizes ITE Trip Generation rates for market-rate multi-family and affordable multi-family housing. Multi-family (Low-rise) was selected for comparison since it is the most common type of multi-family units in the unincorporated area.

The ITE definition for Multi-family (Low-rise) is

> *"Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have two or three floors (levels)."*

The ITE definition for Affordable housing is:

> *"Affordable housing includes all multifamily housing that is rented at below market-rate to households that include at least one employed member. Eligibility to live in affordable housing can be a function of limited household income and resident age."*

ITE provides trip generation for various land use contexts and proximity to transit definitions as follows[2]:

- *"Not Close to Rail Transit"/"Close to Rail Transit – A site it considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station is ½ mile or less.*
- *Center City Core – the downtown area for a major metropolitan region at the focal point of regional light- or heavy-rail transit system.*
- *Dense Multi-Use Urban – a fully developed area (or nearly so), with diverse and interacting complementary land uses, good pedestrian connectivity, and convenient and frequent transit.*
- *General Urban/Suburban – an area associated with almost homogeneous vehicle-centered access. Nearly all person trips that enter or exit a development site are by personal passenger or commercial vehicle.*
- *Rural – agricultural or undeveloped except for scattered parcels and at very low densities.*

The "Not Close to Rail Transit" category and "General Urban/Suburban" land use is most comparable to the unincorporated County for present conditions, as well as under the scenario

[2] Definitions from ITE Trip Generation, 11th Edition: Desk Reference, Chapter 4, Definition of Terms.

that transit options are enhanced in the more urbanized unincorporated communities as envisioned under regional planning efforts. All trip generation rates were selected for the 'Weekday' trip period, 'General Urban/Suburban' setting/location, and 'Not Close to Rail Transit' Land use subcategory.

Table 3: ITE Trip Generation 11th Edition Affordable and Market-Rate Multi-Family Trip Generation Rates

Land Use Category	Trip Generation Rate Per Dwelling Unit		
	Daily Rate	AM Peak Hour Rate	PM Peak Hour Rate
Multi-Family (Low Rise) Not Close to Rail Transit Category 220	6.74 (22 studies)	0.40 (49 studies)	0.51 (59 studies)
Affordable Housing Category 223	4.81 (5 studies)	0.36 (6 studies)	0.46 (8 studies)

Source: ITE Trip Generation 11th Edition

As shown in Table 3, the affordable housing trip generation rate is less than the standard multi-family (low rise) rate. The affordable housing daily trip generation rate is approximately 30% lower than the market-rate multi-family (Low-rise) rate.

San Diego County Affordable Housing Data Collection

Fehr & Peers conducted a trip generation study for three existing affordable housing developments in the unincorporated areas of San Diego County.

ITE provides guidance on conducting trip generation studies in the *Trip Generation Handbook* (2017). The sites that were selected meet the criteria contained in the Trip Generation Handbook. The following considerations were taken in selecting sites for this study: there is a known number of units, the sites are isolated such that counts of the driveways accurately show trips in and out of the community, and there is not on-street parking that would be missed during the study.

Video vehicle trip counts were conducted between October 27th and 29th (Tuesday, Wednesday, and Thursday). The following sites were selected based on their makeup of affordable units, location, access to complex, and size:

1. Fallbrook View: An 80-unit, 99% affordable housing development in central Fallbrook. Features one access driveway and no on-street parking.

2. San Martin De Porres: A 116-unit, 9% affordable housing development in Spring Valley. Features one access driveway and no on-street parking.
3. Spring Villa Apartments: A 136-unit, 100% affordable housing development in Spring Valley. Features one access driveway and no on-street parking.

Attached Figure 1 shows the count locations in unincorporated San Diego County and the placement of the counting equipment. All three locations fit the description of low-rise multi-family residential developments situated in general urban/suburban contexts. **Table 4** shows average daily, AM peak, and PM peak trip generation rates for the three San Diego County locations.

Table 4: San Diego County Affordable Housing Trip Generation Study Results

Location	Trip Generation Rate Per Dwelling Unit		
	Daily Rate	AM Peak Hour Rate	PM Peak Hour Rate
Fallbrook View	5.68	0.49	0.88
San Martin De Porres	4.74	0.55	0.45
Spring Villa Apartments	3.29	0.33	0.36
Average	**4.57**	**0.46**	**0.56**

Source: Fehr & Peers, 2021

As shown, the studied affordable housing sites in San Diego County have lower trip generation rates than ITE market-rate low-rise apartments. The data collected in unincorporated San Diego County is also very similar to the trip generation rates from the other data sources. Also, the two locations in Spring Valley have a lower trip generation rate than the location in Fallbrook. This may be because Spring Valley is located closer to incorporated cities than Fallbrook.

Data Summary

Table 5 provides a comprehensive comparison of daily trip generation rates across the various data sources. Daily trip generation is the focus of this comparison because the VMT metrics for SB 743 purposes are reported on a daily basis.

VMT = Daily Trips Generated x Average Length of Vehicle Trips

Therefore, when comparing a projects that have similar average trip length, the project with lower daily trips generated will result in lower VMT.

Table 5: Affordable Housing Daily Trip Generation Study Comparison

Data Source	Trip Generation Rate Per Dwelling Unit	
	Daily Rate (% Lower Than ITE Multi-Family Low-rise)	% Lower Than ITE Multi-Family Low-rise
ITE Multi-Family (Low Rise) Not Close to Rail Transit Category 220	6.74	NA
ITE Affordable Housing Category 223	4.81	-29%
Clifton et al Report	NA	NA
Los Angeles Study All Affordable Housing Categories (Outside TPA)	2.48	-63%
Los Angeles Study All Family Housing Categories (Outside TPA)	4.15	-38%
Fallbrook View	5.68	-16%
San Martin De Porres	4.74	-30%
Spring Villa Apartments	3.29	-51%
San Diego County Affordable Housing Average	**4.57**	**-32%**

Notes: The percentages represent the percent below multi-family (low rise) ITE Trip Generation Rates.
Source: Fehr & Peers, 2021

Review of the data suggests that the ITE Trip Generation rates for Affordable Housing reasonably represent the data collected for the developments in unincorporated San Diego County. Therefore, the ITE Trip Generation rates can be used to generally represent 100% affordable housing projects in the County.

Affordable Housing VMT Screening Options

The daily trip generation rates from the ITE Trip Generation Manual for market-rate multi-family (low-rise) housing and affordable housing were used to develop a ratio of affordable housing that would continue to generate less trips than a market-rate multi-family housing project. This approach was used to expand the screening beyond 100% affordable projects. As described above, the simple definition of VMT is average trip length multiplied by average number of trips. Trip generation represents the average number of trips, and this is the portion of the equation that is the focus of this memorandum and analysis.

The following assumptions and variables are used in the analysis presented herein:

1. VMT = average trip length x average trips
2. Trip Generation represents "average trips".
3. Average trip length is primarily based on the location of a project, such at that all projects located near one another will have similar average trip lengths.
4. To "screen" a project from performing VMT analysis we are presuming that the project has a less-than-significant transportation VMT impact.
5. For residential projects to have a less than significant VMT impact, the analysis in this memorandum uses a threshold of 15 percent below the regional average VMT rate.
6. Since the focus variable is "average trips" it is important to make sure that the "average trip length" is representative of the SANDAG regional average trip length. For example, a residential project that has an average trip generation of 4 daily trips per unit and an average trip length of 5 miles would generate 20 VMT per unit. If a neighboring project has an average trip generation of 8 daily trips, but still an average trip length of 5 miles (since they are in the same location), it will generate 40 VMT per unit. Now consider a project that is in a completely different location that has an average trip length of 10 miles but still has an average daily trip generation of 4 tips per unit. The resulting VMT/unit is 40 VMT.
7. The purpose of this analysis is to demonstrate that because affordable housing generates less trips than market-rate housing it should be presumed to have lower VMT. This statement is only true if the affordable housing and market-rate housing have similar average trip lengths.
8. We determined that the "infill areas"[3] have an average VMT/capita that is consistent with the average regional VMT/capita. For purposes of this analysis, we confirmed that all infill areas fall within -15% to +25% of average (which captures the two ranges that contain "average") as displayed on the standard VMT/capita map. The VMT/Capita map shows VMT/capita in ranges of
    - More than -15% below average
    - -15% to average
    - Average to +25%
    - Greater than 25% of average.

    Attached Figure 2 shows the "infill areas" overlaid on the SANDAG regional average VMT/Capita map. Since trips generated by a land use is largely based on average trip generation rates applied consistently throughout the region, the variation in VMT

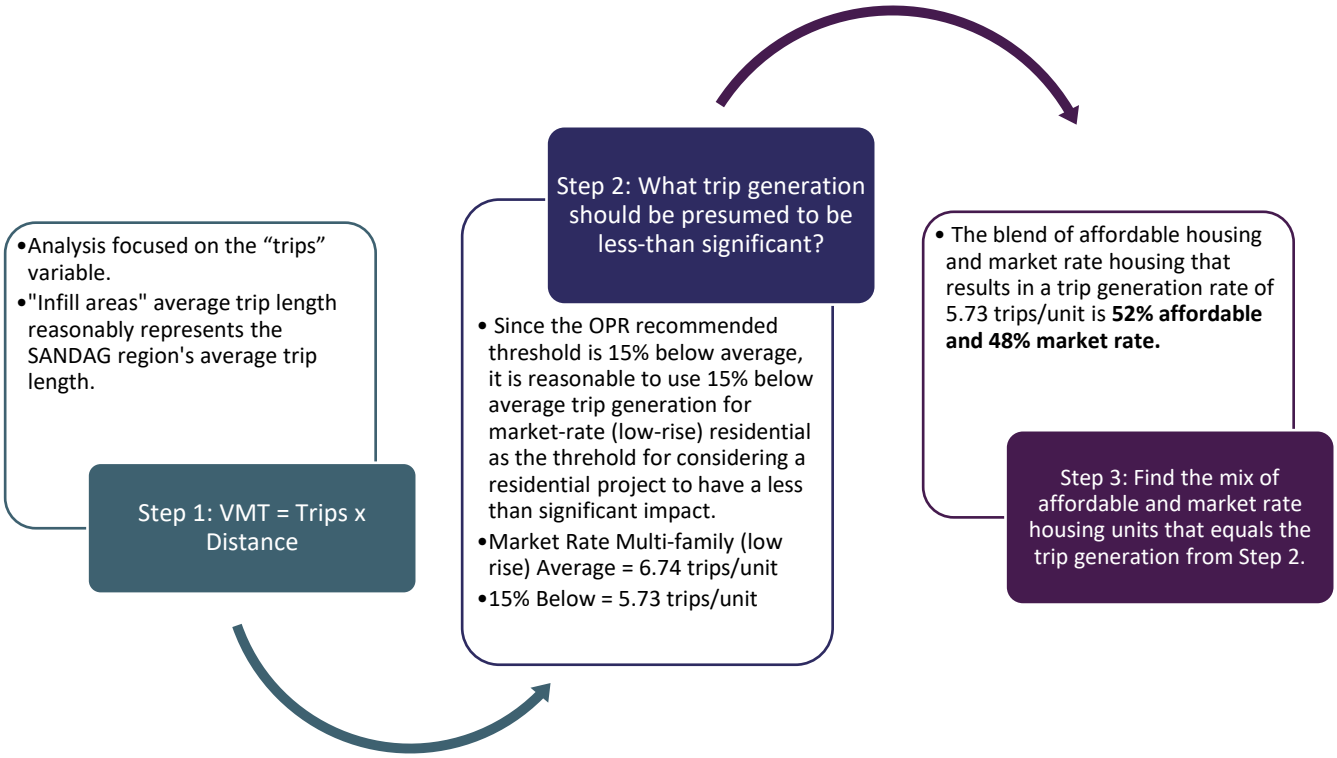
[3] "Infill areas" are defined in the "Infill Areas in Unincorporated San Diego County, Fehr & Peers, October 29, 2021

displayed on the map is due to differences in average trip length. Therefore, it is appropriate to assume that if a project is within the average VMT/capita range, it reasonably represents the average trip length within the region. Since the "infill areas" fall with the average range, residential units within these areas are expected to have trip lengths that are consistent with the regional average trip length.

9. The portion of the unincorporated county outside of the "infill areas" can be considered to have an average trip length that is greater than 25% above the regional average trip length. For purposes of the analysis, we assumed that most developable locations in the unincorporated county have trip lengths that are 40% above the regional average. This was selected to estimate the midpoint of the range of values 25%-50% above average, rounding up to 40%.

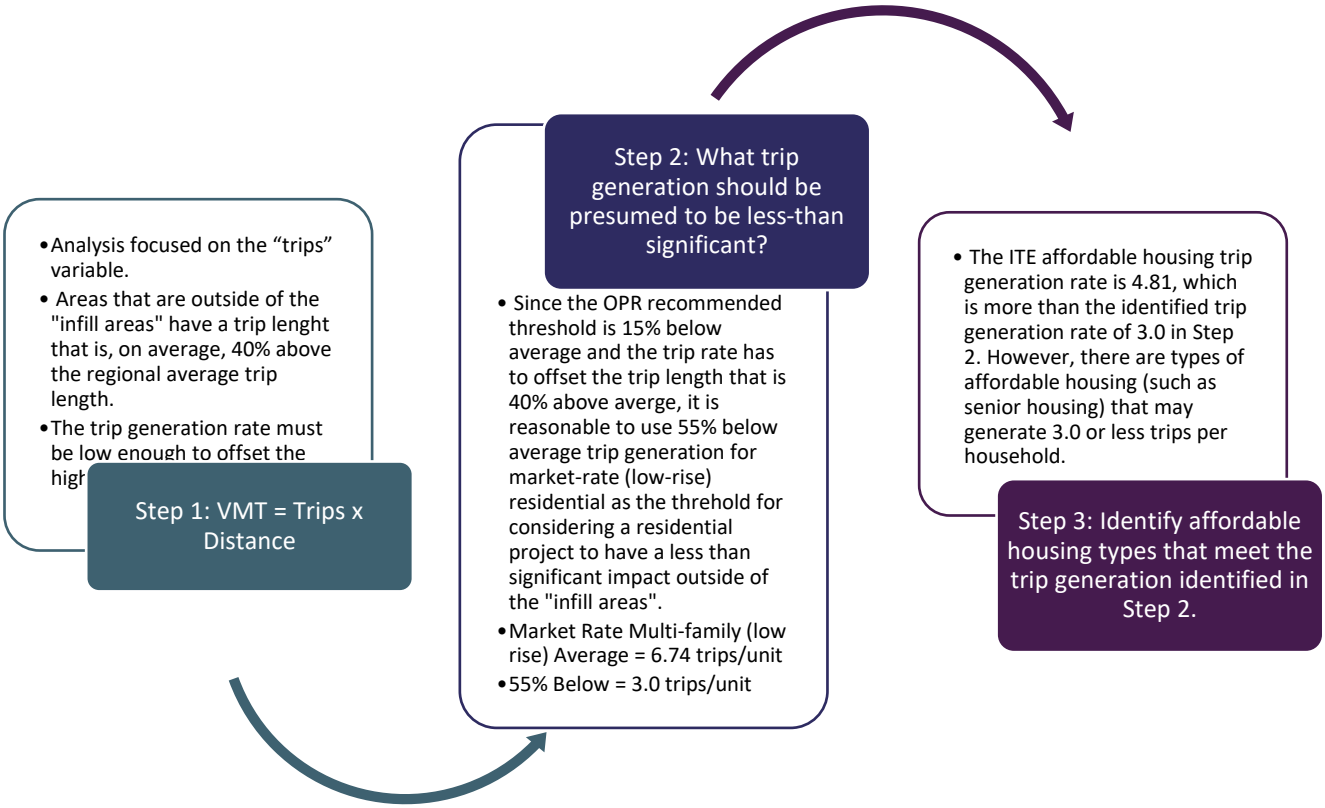
Using the variables and assumptions documented above, the following procedure was used to determine the mix of affordable housing that would result in a trip generation that could meet the threshold of 15% below average for the "infill areas" and other parts of the unincorporated county. The calculations are provided in **Attachment A**.

Procedure for "infill areas":



Based on the analysis, a project that is located in an "infill area" that is at least 52% affordable will result in a "blended" market-rate/affordable trip generation rate that is 15% below a typical market-rate multi-family development daily trip generation.

Procedure for "other areas":



Based on the analysis, standard affordable housing projects do not have a trip generation rate that is low enough to automatically be presumed to generate VMT at a rate considered less than significant. However, certain types of affordable housing, such as senior affordable housing do have trip generation rates that are low enough to presume less than significant VMT. An option is to allow individual projects to demonstrate that they can achieve a combined average trip length and average trips that can meet a 15% below regional average VMT.

Options for Consideration

Based on the results of this research, the following options could be considered by the Board of Supervisors:

1. Rely on the OPR Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018) screening language (page 14-15) and require each affordable housing project to provide substantial evidence for why the screening applies to them. This would most commonly result in 100% affordable housing in infill locations being screened.[4]

2. Allow projects that have at least 52% affordable housing in "infill areas" to be screened based on the evidence prepared for this study. However, do not allow affordable housing to be screened outside "infill areas" (because the OPR Technical Advisory specifies "infill"). Note that trip generation rates are known to fluctuate by +/- 10% when comparing different days of the week; therefore, for simplicity and to reference a "round number", it would be appropriate to allow projects that are at least 50% affordable in "infill areas" to be screened.

3. Allow projects that have at least 52% affordable housing in "infill areas" to be screened and affordable projects that are outside infill areas to be screened if they can demonstrate a blend of trip generation and trip length that can achieve 15% below average. As shown in this memorandum an affordable project with a trip generation rate that is 3.0 trips per unit of fewer would generally be presumed to have a less than significant VMT impact.

[4] The OPR Technical Advisory indicates that: "Evidence supports a presumption of less than significant impact for a 100 percent affordable residential development (or the residential component of a mixed-use development) in infill locations. Lead agencies may develop their own presumption of less than significant impact for residential projects (or residential portions of mixed-use projects) containing a particular amount of affordable housing, based on local circumstances and evidence. Furthermore, a project which includes any affordable residential units may factor the effect of the affordability on VMT into the assessment of VMT generated by those units.) (Page 15)

References

Clifton, K. J., Currans, K. M., Schneider, R., & Handy, S. (2018). *Affordable Housing Trip Generation Strategies and Rates* (Technical Report No. CA18-2465; p. 170). California Department of Transportation. https://dot.ca.gov/-/media/dot-media/programs/research-innovation-system-information/documents/final-reports/ca18-2465-finalreport-a11y.pdf

Gaul, T., & Bearn, C. (2017, April 17). *Infill and Complete Streets Study* [Memorandum].

OPR Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018)

Trip Generation Manual, 11th Edition. (2021). Institute of Transportation Engineers.

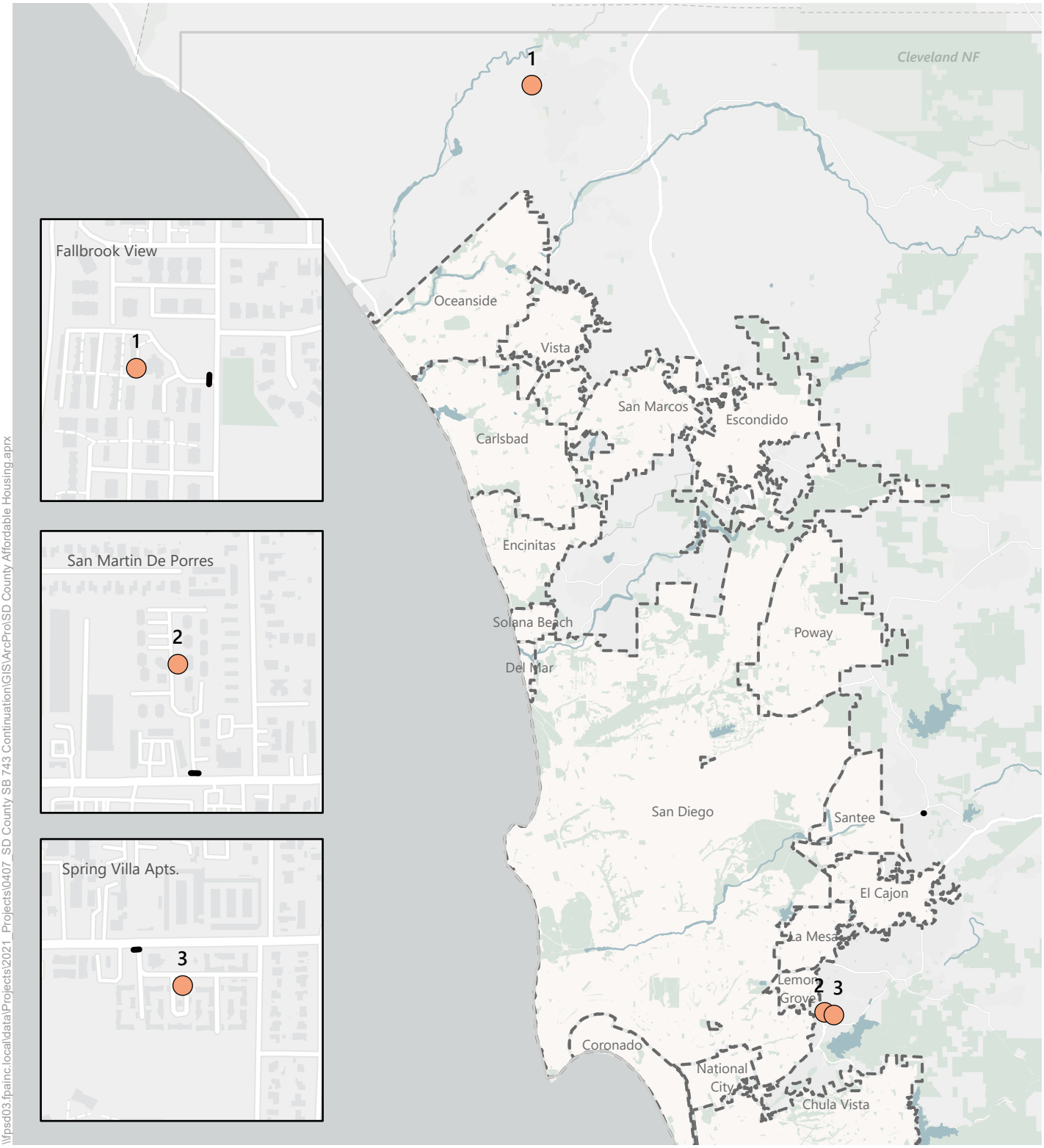
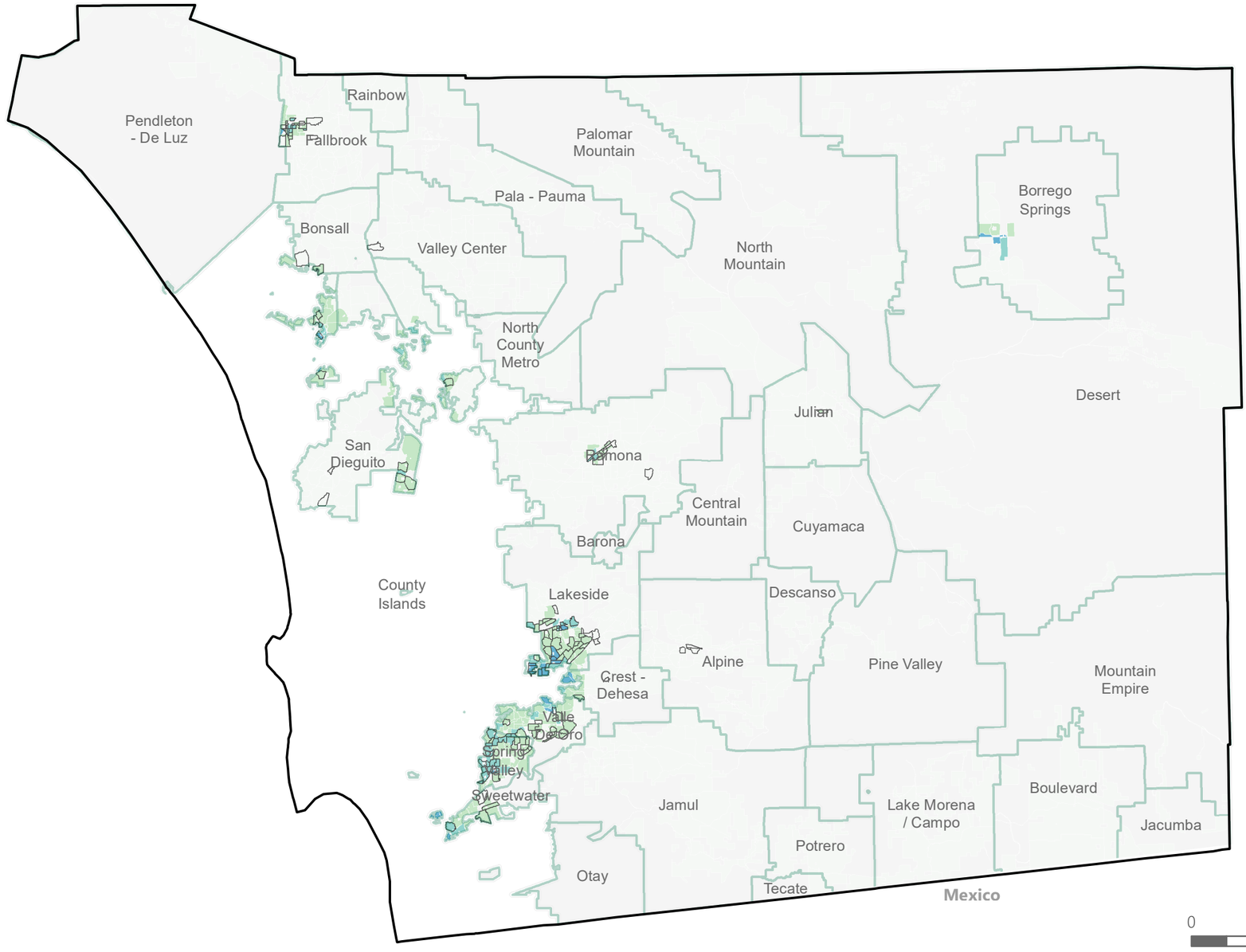


Figure 1: Affordable Housing Trip Generation Study Locations in San Diego County

Draft



Legend

- SANDAG Region
- Community Plan Area
- Unincorporated County TAZs which meet "Infill Area" definition in "Infill Development in San Diego County" Technical Memorandum (Fehr & Peers, October 2021)
- VMT Less than 85% regional average
- VMT between 85% and 100% regional average
- VMT between 100% and 125% regional average
- VMT above 125% regional average

Figure 2: VMT Per Capita and Infill Opportunity Areas

*Based on the SANDAG Series 13 Base Year Model

November 30, 2021

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Attachment A
Affordable Housing and SB 743 - Screening Considerations

Summary of Affordable Housing Daily Trip Generation Data Source	Daily Trip Generation Rate	% Lower Than ITE Low Rise Multi-Fam Rate
SANDAG Not So Brief Guide Multi-Family	6	NA
ITE Low Rise Multi-family Housing (11th Ed)	6.74	NA
ITE Affordable Housing (11th Ed)	4.81	-29%
F&P LA Affordable Housing Study for 100% Affordable Family Units	4.16	-38%
Fallbrook View (100% Affordable, 80 units, Fallbrook) A1	5.68	-16%
San Martin De Porres (9% Affordable, 116 units, Spring Valley)	4.74	-30%
Spring Villa Apts (100% Affordable, 136 units, Spring Valley)	3.29	-51%
Average of County of San Diego Trip Generation	4.57	-32%

Screening Calculations (see notes for additional details)			
Infill Area Locations (as defined in the October Infill Areas in Unincorporated San Diego County Technical Memorandum)	trip gen target (15% below average multi-family ITE trip gen rate):	5.73	Based on 6.74*(1-.15)
	100% affordable multi-fam average trip gen rate	4.81	
	Standard multi-fam average trip gen rate	6.74	
	What blend of affordable and standard equal 5.73?	47.6%	non affordable
		52.4%	affordable
Other Areas (rural, non-infill Village)	trip gen target (55% below average multi-family ITE trip gen rate to offset longer trip lengths):	3.03	Based on 6.74*(1-.55)
	100% affordable multi-fam aver	5.68	Above 3.03, typically affordable housing would not automatically be screened; however many types of affordable housing such as senior affordable housing would generate less than 3.0 daily trips.

Note 1: Based on the San Diego data collected, it confims that the ITE national rates for suburban (not near transit) affordable housing reasonably represent affordable housing in the County. This is true in the "infill" locations.

Note 2: Since 100% affordable housing can be screened becase it is presumed to generate less vehicle trips than typical multi-family housing, it seems appropriate to establish a relationship that can be used to figure out the percentage of affordable units that would still result in less VMT than market-rate. Since the starting point is the average trip generation rate for mulit-family units, and we are going to focus on the number of trips aspect of the VMT equation (trips * distance), it is reasonable to set a trip generation target that is 15% below the average to be able be consistent with the VMT threshold of 15% below average.