Nakano (221 Dwelling Units)
City of Chula Vista
450 Block of Dennery Rd
October 30, 2023

Vehicle Miles Traveled Analysis
(City of Chula Vista MPA21-0017)
(City of San Diego PTS# 647766)

Prepared for:

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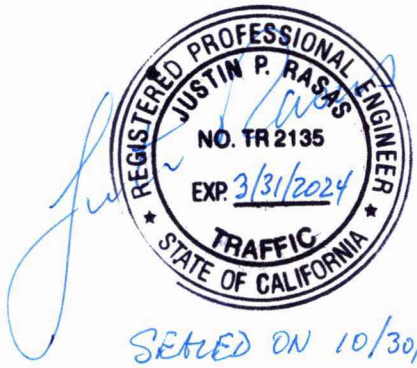
Job #1930



SEALED ON 10/30/2023

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List of Acronyms

LOS ..... Level of Service
OPR ..... Office of Planning and Research
PIF ..... Project Information Form
VMT ..... Vehicle Miles Traveled

Executive Summary
Nakano Residential Subdivision (up to 221 Homes)

The proposed project includes up to 221 residential dwelling units (mix of up to 67 detached condominiums, 84 duplexes and 70 multi-family units) on a 23.8 acre parcel of vacant land that is located at the 450 block of Dennery Road, Chula Vista, California. The project would include 22 affordable units (11 low-income and 11 moderate-income). Project access is proposed from a single private right-in/right-out driveway on Dennery Road (the existing driveway will be closed and replaced with full height curb and gutter). A new driveway is proposed approximately 40 feet southwest of the existing driveway that will be closed. No modification is proposed to the existing median on Dennery Road at the project access location. The two-lane project access will include Class II bike lanes and non-contiguous sidewalks on both sides. Project opening is forecasted to occur in 2025. The project consists of the following scenarios:

Scenario 1, the No Annexation Scenario
This scenario assumes the project would stay within the City of Chula Vista and not be annexed into the City of San Diego. LAFCO approval of out of agency service agreements for services and utilities from City of San Diego would be required. Under this scenario, City of Chula Vista would issue grading and development permits for the project site; however, the City of San Diego would require a site development permit, grading and right-of-way permit for the off-site improvements associated with primary site access and secondary emergency access.

Two potential annexation scenarios are outlined below. In both scenarios, the project site would be annexed into the City of San Diego; however, the agency responsible for issuance of grading and development permits for the project site would differ. These two annexation scenarios include:

Scenario 2a: Annexation Scenario with Site Development in San Diego
In Scenario 2a, grading and development of the project site would not proceed until the LAFCO reorganization process is complete and the project site is annexed into the City of San Diego. In this scenario, the City of San Diego would issue grading and development permits for the project site and all off-site improvement areas after approval of the LAFCO reorganization.

Scenario 2b: Annexation Scenario with Site Development in Chula Vista
In Scenario 2b, grading and site development would proceed prior to LAFCO reorganization. In this scenario, the City of Chula Vista would issue grading and development permits for the project site and City of San Diego would issue a grading permit and right-of-way permit for the off-site public improvements prior to approval of the LAFCO reorganization. After the project is fully developed in Chula Vista, the project site would be annexed into San Diego.

The development under all scenarios would be the same, but the discretionary actions would differ. In all scenarios, an amendment to change the 23.8-acre parcel from an existing City of Chula Vista General Plan land use designation of Open Space (OS) to a General Plan land use designation of Specific Plan – Residential Medium would be required. In both Annexation Scenarios, the City of

San Diego would be required to adopt a prezoning ordinance to delineate zoning territory not yet incorporated into the City of San Diego as Residential Multiple Unit 1-1 (RM-1-1), amend the General Plan to designate the site as Residential-Low Medium, and amend the Otay Mesa Community Plan to designate the site as Residential-Low Medium.

This VMT analysis is used to determine if the project would have a potential California Environmental Quality Act (CEQA) significant Vehicle Miles Traveled (VMT) transportation impact. While City of Chula Vista is the lead agency, the project may ultimately annex into City of San Diego under the Annexation Scenarios. As a result, the thresholds of the applicable agency are utilized as follows:

- In the No Annexation Scenario and in the Annexation Scenario 2b, the VMT threshold contained in the City of Chula Vista Transportation Study Guidelines is the appropriate threshold because the project would either remain in Chula Vista (No Annexation Scenario), or be implemented in Chula Vista (Annexation Scenario 2b). Therefore, under these scenarios, Chula Vista is responsible for implementing the project and associated VMT requirements.

- In Annexation Scenario 2a, the VMT thresholds contained in the City of San Diego Transportation Study Manual are appropriate because the project would be annexed into and developed in San Diego.

Although each agency has their own transportation study guidelines, the VMT threshold for both agencies is the same; project impacts to VMT may be significant if project VMT exceeds 15% below the regional mean VMT per Capita. However, mitigation requirements for each of the agencies differ and would be required to follow their respective guidelines.

The project is forecasted to have a significant VMT transportation impact because the project location and proposed land use within Census Tract 100.14 are forecasted to be at 92.0% of the Regional Mean (17.4 VMT/capita, which is based on the current edition of the SANDAG Series 14 ABM 2+ base year 2016 regional model), which is above the 85th percentile mean of 18.9 VMT per Capita. Potential Transportation Demand Management (TDM) measures from the California Air Pollution Control Officers Association (CAPCOA) *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity,* December 2021 were reviewed for project applicability and for the No Annexation and Annexation scenarios.

Under the No Annexation scenario where the project will remain in the City of Chula Vista and in Annexation Scenario 2b, where the project would be developed in Chula Vista, CAPCOA Strategies T-1 and T-4 were applied as recommended by CAPCOA guidance. Transportation Measure T-1: Increased Residential Density was applied (because the project is designed with a higher density of dwelling units as compared to the surrounding neighborhood) resulting in a forecasted VMT reduction of 0.5% (T-1 applicable under City of Chula Vista guidelines). Additionally, the project provides for 22 affordable units (11 of which will be low-income affordable units); therefore, Transportation Measure T-4: Integrate Affordable and Below Market Rate Housing was also applied resulting in a forecasted project VMT reduction of 1.4%. However, even after consideration of the CAPCOA strategies, the VMT transportation impact is considered significant because the final VMT of 90.1% is above 85% of the regional mean after implementation of CAPCOA TDM strategies T-1

and T-4. In order to mitigate the project's significant transportation VMT impact to the extent feasible, the analysis incorporates the following mitigation measure in the No Annexation Scenario and in Annexation Scenario 2b:

- Prior to the issuance of the first building permit, the Owner/Permittee shall pay the City of San Diego Active Transportation In Lieu Fee consistent with SDMC Section 143.1101 as mitigation to the extent feasible. The Owner/Permittee shall provide evidence to the City of Chula Vista that the fee has been paid to the City of San Diego.

Under the Annexation Scenario 2a where the project would be annexed to the City of San Diego and developed in San Diego, CAPCOA Strategy T-4 was applied. The project provides for 22 affordable units (11 of which will be low-income affordable units); therefore, Transportation Measure T-4: Integrate Affordable and Below Market Rate Housing was also applied resulting in a forecasted project VMT reduction of 1.4%. Even with consideration of the CAPCOA strategies, the VMT transportation impact is considered significant because the final VMT of 90.6% is above 85% of the regional mean after implementation of TDM Measure T-4. In No Annexation Scenario 2a the project would be required to pay the City of San Diego Active Transportation In-Lieu Fee based on the project being in the City of San Diego Mobility Zone 4 after annexation. In the City of San Diego, VMT impacts have been considered Citywide within the City's Complete Communities: Housing Solutions and Mobility Choices FEIR (State Clearinghouse #2019060003). The project would rely upon the Findings and Statement of Overriding Considerations of the City of San Diego's Complete Communities: Housing Solutions and Mobility Choices FEIR. In Annexation Scenario 2a, the project would pay the required City of San Diego Active Transportation In Lieu Fee as mitigation to the extent feasible. The analysis incorporates the following mitigation measure in the Annexation Scenario 2a:

- Prior to the issuance of the first building permit, the Owner/Permittee shall pay the City of San Diego Active Transportation In Lieu Fee consistent with SDMC Section 143.1101 as mitigation to the extent feasible.

1.0 Introduction

The proposed project includes up to 221 residential dwelling units (anticipated mix of up to 67 detached condominiums, 84 duplexes and 70 multi-family units) on 23.8 acres of vacant land that is located at the 450 block of Dennery Road Chula Vista, California. The project would include 22 affordable units (11 low-income and 11 moderate-income). The overall project density is 9.3 dwelling units per acre. Project access is proposed from a single private right-in/right-out driveway on Dennery Road (the existing driveway will be closed and replaced with full height curb and gutter). A new driveway is proposed approximately 40 feet southwest of the existing driveway that will be closed. No modification is proposed to the existing median on Dennery Road at the project access location. The two-lane project access will include Class II bike lanes and non-contiguous sidewalks on both sides. Project opening is forecasted to occur in 2025. The project is in the City of Chula Vista and is proposed to be annexed into the City of San Diego, although a No Annexation Scenario and two Annexation scenarios are contemplated. Therefore, this report has been reviewed by both agencies.

The project consists of the following scenarios:

Scenario 1, the No Annexation Scenario
This scenario assumes the project would stay in City of Chula Vista and not be annexed into City of San Diego. LAFCO approval of out of agency service agreements for services and utilities from City of San Diego would be required. Under this scenario, City of Chula Vista would issue grading and development permits for the project site; however, the City of San Diego would require a site development permit, grading and right-of-way permit for the off-site improvements associated with primary site access and secondary emergency access.

Two potential annexation scenarios are outlined below. In both scenarios, the project site would be annexed into the City of San Diego; however, the agency responsible for issuance of grading and development permits for the project site would differ. These two annexation scenarios include:

Scenario 2a: Annexation Scenario with Site Development in San Diego
In Scenario 2a, grading and development of the project site would not proceed until the LAFCO reorganization process is complete and the project site is annexed into City of San Diego. In this scenario, the City of San Diego would issue grading and development permits for the project site and all off-site improvement areas after approval of the LAFCO reorganization.

Scenario 2b: Annexation Scenario with Site Development in Chula Vista
In Scenario 2b, grading and site development would proceed prior to LAFCO reorganization. In this scenario, the City of Chula Vista would issue grading and development permits for the project site and City of San Diego would issue a grading and right-of-way permit for the off-site public improvements prior to approval of the LAFCO reorganization. After the project is fully developed in Chula Vista, then the project site would be annexed into San Diego.

The development under all scenarios would be the same, but the discretionary actions would differ. As part of the project, the applicant is proposing an amendment to the Chula Vista General Plan to change the 23.8-acre parcel from an existing General Plan land use designation of Open Space (OS) to Specific Plan – Residential Medium. The following City of Chula Vista discretionary approvals are required for implementation of all scenarios:

1) Amendment to the Chula Vista General Plan to remove the Open Space designation and designate the project site as Specific Plan – Residential Medium to allow residential development at a density range of 6.1 to 11 dwelling units per acre.
2) An Ordinance approving the Nakano Specific Plan. The Specific Plan would implement a new residential zone and apply site-specific policies and development standards.
3) Tentative Map.
4) Certification of the Final EIR including adoption of a Mitigation Monitoring and Reporting Program and approval of required CEQA findings.

In both Annexation Scenarios, the City of San Diego would be required to adopt a prezoning ordinance to delineate zoning territory not yet incorporated into the City of San Diego as Residential Multiple Unit 1-1 (RM-1-1), amend the General Plan to designate the site as Residential -Low Medium, and amend the Otay Mesa Community Plan to designate the site as Residential-Low Medium. In the Annexation Scenarios, a LAFCO action would be required and both cities would be required to approve an annexation agreement.

While Chula Vista is the lead agency, the project may ultimately annex into San Diego under the Annexation Scenarios. As a result, the thresholds of the applicable agency are utilized as follows:

- In the No Annexation Scenario and in the Annexation Scenario 2b, the VMT threshold contained in the City of Chula Vista Transportation Study Guidelines is the appropriate threshold because the project would either remain in Chula Vista (No Annexation Scenario) or be implemented in Chula Vista (Annexation Scenario 2b). Therefore, under these scenarios, Chula Vista is responsible for implementing the project and associated VMT requirements.
- In Annexation Scenario 2a, the VMT thresholds contained in the City of San Diego Transportation Study Manual are appropriate because the project would be annexed into and developed in San Diego.

The purpose of this report is to determine if the project would result in a significant Vehicle Miles Traveled (VMT) transportation impact to fulfill California Environmental Quality Act (CEQA) requirements.

The project site is bordered to the north by the Otay River, to the south by Kaiser Permanente medical center, to the east by Riveredge Terrace residential subdivision, and to the west by I-805. The location of the project is shown in **Figure 1** with a preliminary site plan shown in **Figure 2**. The format of this study includes the following chapters:

1.0 Introduction
2.0 Vehicle Miles Traveled
3.0 Chula Vista Project Information Form and Traffic Study Content Form

Figure 1: Project Location

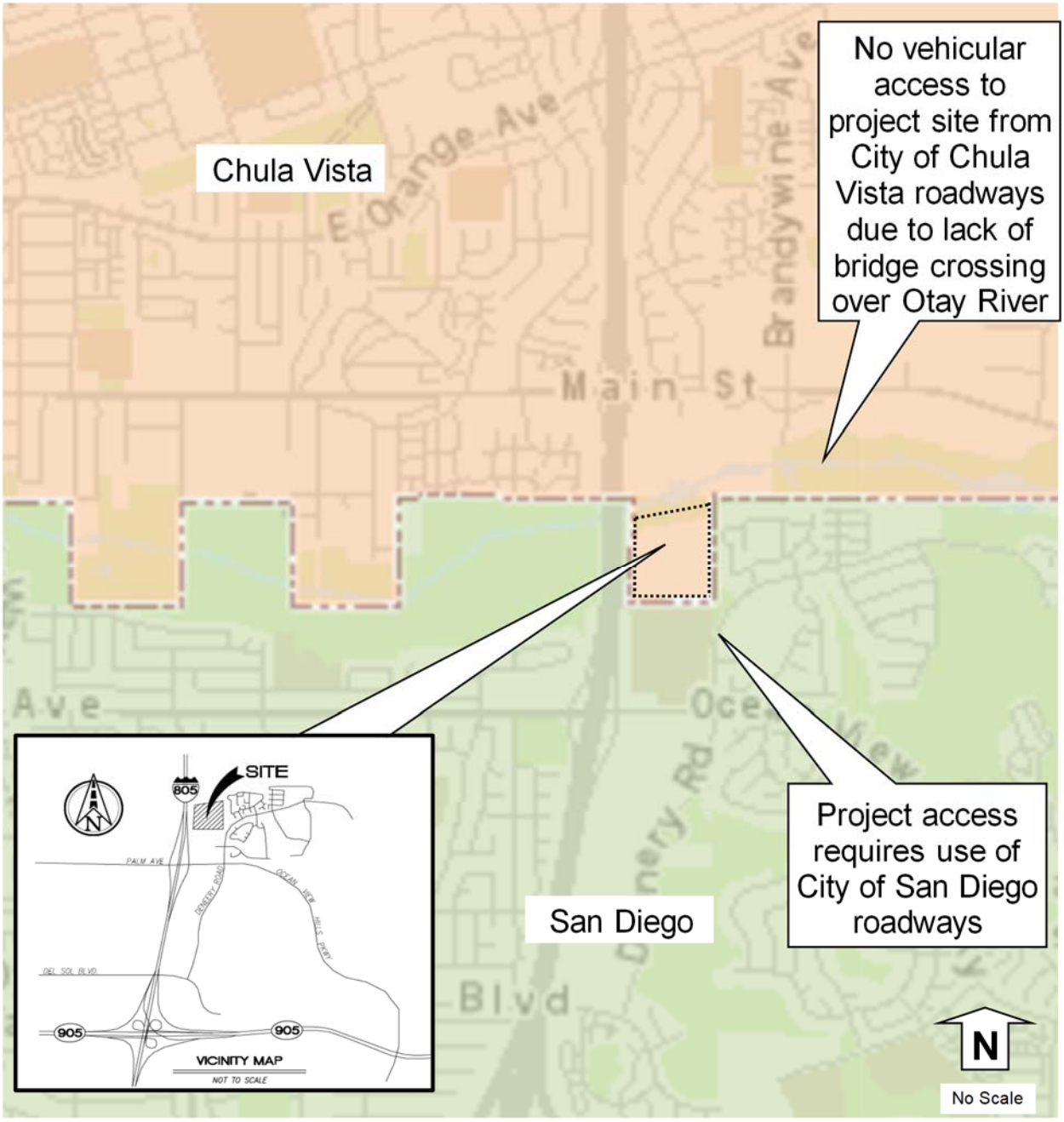
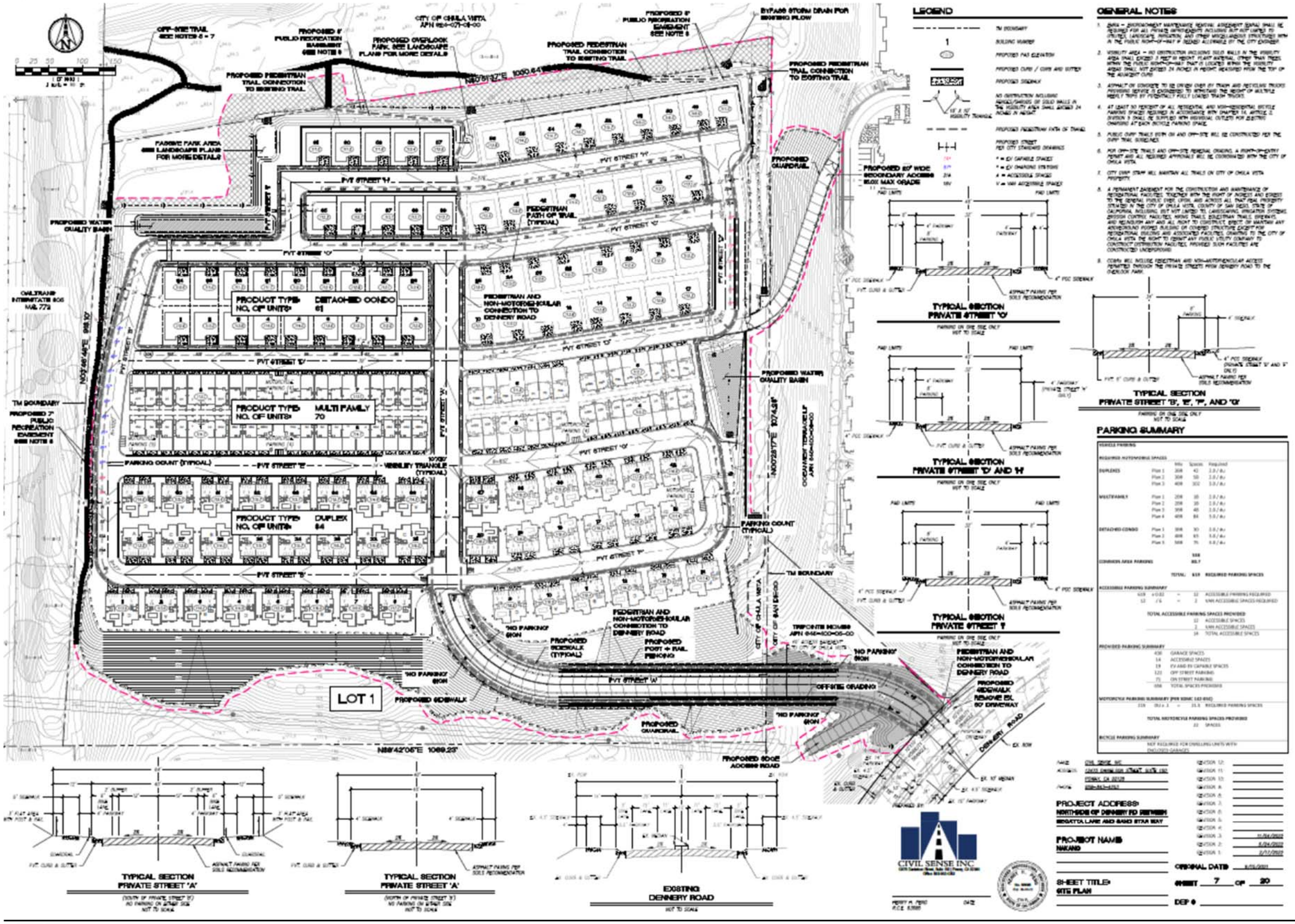


Figure 2: Site Plan



2.0 Vehicle Miles Traveled

The California Governor's Office of Planning and Research (OPR) has identified VMT as the California Environmental Quality Act (CEQA) metric to evaluate a project's transportation impacts. The OPR *Transportation Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 2018 states on page 8 "As noted above, lead agencies have the discretion to set or apply their own thresholds of significance". Excerpts from the OPR Technical Advisory are included in **Appendix A**. This VMT analysis was based on guidance from the Governor's OPR Technical Advisory using the lead agency City of Chula Vista *Transportation Study Guidelines*, June 10, 2020 (updated January 2022).

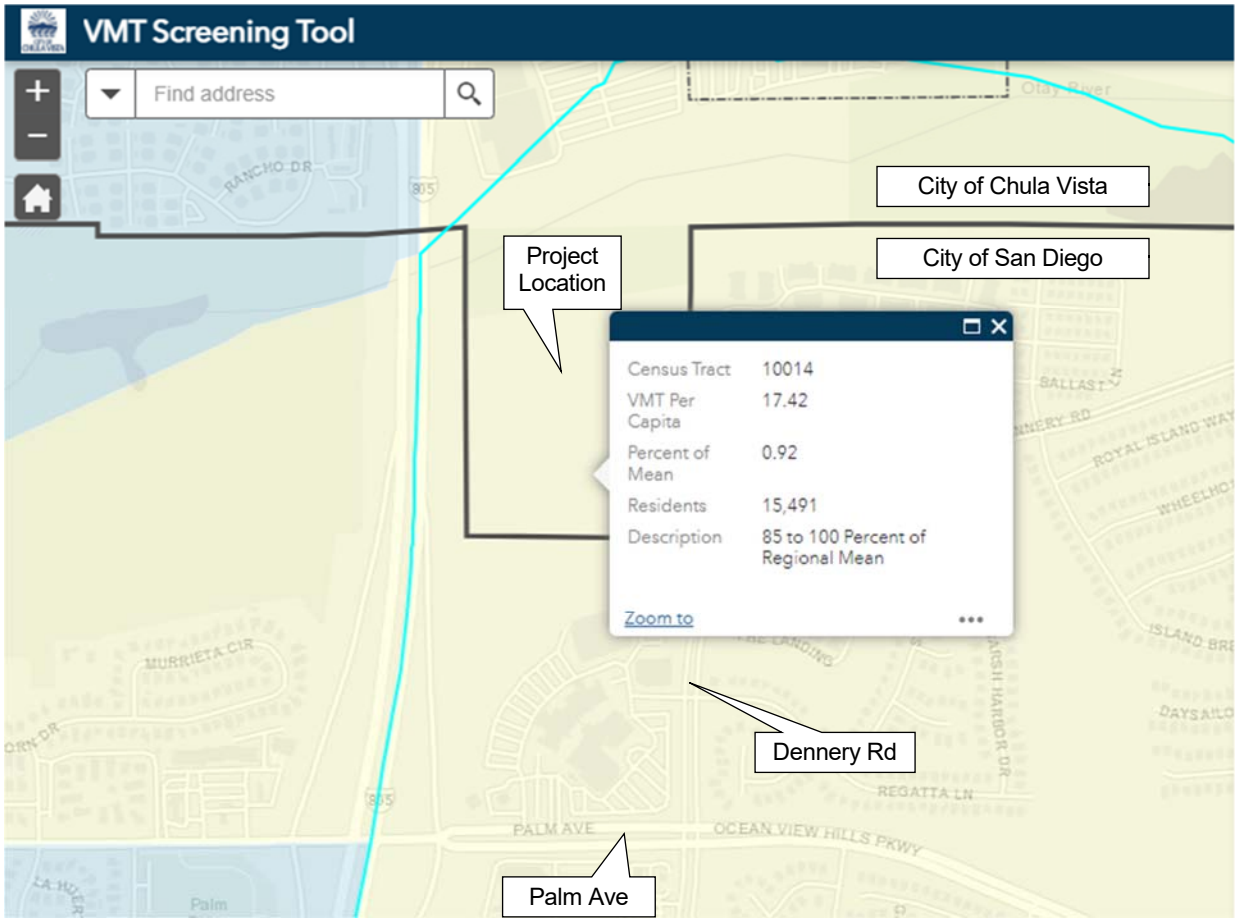
2.1 VMT Significance Criteria

While Chula Vista is the lead agency, the project may ultimately annex into San Diego. As a result, the thresholds of each agency are considered. The VMT threshold contained in the City of Chula Vista Transportation Study Guidelines is the appropriate threshold in the event the project stays within the City of Chula Vista (No Annexation Scenario). The City of San Diego Transportation Study Manual identifies VMT thresholds appropriate for the project in the event the project is annexed into the City of San Diego (Annexation Scenario). The threshold for both agencies to determine a significant transportation VMT impact is 15% below the regional mean VMT per Capita (projects that exceed this threshold would have a significant impact), therefore, the significance threshold is the same for both agencies.

2.2 Project VMT

The project VMT was obtained from the City of Chula Vista VMT Screening Tool, which is based on the current edition of the SANDAG Series 14 ABM 2+ base year 2016 regional model. The project is forecasted to have a significant VMT transportation impact because the project location and proposed land use within Census Tract 100.14 are forecasted to be at 92.0% of the Regional Mean (17.4 VMT per Capita), which is above the 85th percentile mean of 18.9 VMT per Capita, as shown in **Figure 3**. The current edition of the SANDAG Series 14 ABM 2+ base year 2016 regional model is included in **Appendix B**.

Figure 3: Chula Vista VMT per Capita by Census Tract



2.3 Project VMT Reduction Strategy and Mitigation (No Annexation Scenario and Annexation Scenario 2b)

The City of Chula Vista *Transportation Study Guidelines* recommends VMT mitigation through either reducing the number of automobile trips or by reducing the distance that people drive. This may be achieved through implementation of a Transportation Demand Management (TDM) program. Potential Transportation (T) Project/Site TDM measures from the California Air Pollution Control Officers Association (CAPCOA) *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity,* December 2021 were reviewed for project applicability. The following two reduction strategies were applied:

T-1: Increase Residential Density. A project with increased density results in shorter and fewer trips by single-occupancy vehicles. This measure is applicable under City of Chula Vista guidelines due to the increased density.

T-4: Integrate Affordable and Below Market Rate Housing. Twenty-two (22) affordable units are proposed (11 low-income and 11 moderate-income). Therefore, this measure is applicable for the 11 low-income units.

Calculations for the applied CAPCOA VMT reduction strategies measures are included in **Appendix C**. A summary of the applicable strategies and potential VMT reduction is shown in **Table 1**.

TABLE 1: CAPCOA VMT REDUCTION STRATEGIES

CAPCOA 2021 VMT Mitigation Strategy	VMT Reduction Range %	Application	Project VMT % Reduction
T-1. Increase Residential Density	0-30%	A project with increased density results in shorter and fewer trips by single-occupancy vehicles.	-0.5%
T-4. Integrate Affordable and Below Rate Housing	0-28.6%	A project with affordable housing provides greater opportunity for lower income families to live closer to job centers.	-1.4%

Source: CAPCOA Dec 2021.

VMT reduction measures are not directly additive and requires application of a multiplicative formula to account for measure redundancy. The multiplicative formula is as follows:

Overall VMT % Reduction = 1-(1-A)*(1-B)…

Where A, B are the individual mitigation measures.

CAPCOA VMT % Reduction = 1-(1-0.5%)*(1-1.4%) = -1.9%. As shown in **Table 2**, the VMT transportation impact is NOT reduced to below a level of significance because the final VMT of 90.1% is above 85% after implementation of CAPCOA strategies T-1 and T-4.

TABLE 2: PROJECT VMT REDUCTION BASED ON CAPCOA STRATEGIES

Project VMT	Total VMT % Reduction	VMT after CAPCOA Strategies	VMT below 85%?
92.0%	-1.9%	90.1%	No

As shown above, the project VMT threshold is exceeded even after application of CAPCOA strategies, resulting in a significant VMT impact. In order to mitigate significant VMT impacts, the Owner/Permittee shall pay the City of San Diego Active Transportation In Lieu Fee consistent with SDMC Section 143.1101 as mitigation to the extent feasible. Payment of the City of San Diego Active Transportation In Lieu Fee would be used to fund VMT reducing infrastructure projects throughout the City of San Diego.

The project will rely upon the Findings and Statement of Overriding Considerations that were adopted with the Complete Communities: Housing Solutions and Mobility Choices PEIR. which evaluated implementation of the City of San Diego's fee program for VMT impacts. Although the project site is not currently located within the City of San Diego, the project would mitigate its significant VMT impact by participation in the City of San Diego Complete Communities: Housing Solutions and Mobility Choices program by paying an Active Transportation In Lieu Fee as mitigation to the extent feasible.

2.4 Project VMT Reduction Strategy and Mitigation (Annexation Scenario 2a)

The City of San Diego *Transportation Study Manual* recommends VMT reductions through either reducing the number of automobile trips or by reducing the distance that people drive. This may be achieved through implementation of a Transportation Demand Management (TDM) program. Potential Transportation (T) Project/Site TDM measures from the California Air Pollution Control Officers Association (CAPCOA) *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity,* December 2021 were reviewed for project applicability. The following mitigation strategy was applied:

T-4: Integrate Affordable and Below Market Rate Housing. Twenty-two (22) affordable units are proposed (11 low-income and 11 moderate-income). Therefore, this measure is applicable for the 11 low-income units.

Calculations for the applied CAPCOA VMT reduction measures are included in **Appendix D**. A summary of the applicable strategies and potential VMT reduction is shown in **Table 3**.

TABLE 3: CAPCOA VMT REDUCTION STRATEGIES

CAPCOA 2021 VMT Mitigation Strategy	VMT Reduction Range %	Application	Project VMT % Reduction
T-4. Integrate Affordable and Below Rate Housing	0-28.6%	A project with affordable housing provides greater opportunity for lower income families to live closer to job centers.	-1.4%

Source: CAPCOA Dec 2021.

CAPCOA VMT % Reduction = -1.4%. As shown in **Table 4**, the VMT transportation impact is significant because the final VMT of 90.6% is above 85% after implementation of CAPCOA strategy T-4.

TABLE 4: PROJECT VMT REDUCTION BASED ON CAPCOA STRATEGIES

Project VMT	Total VMT % Reduction with CAPCOA Strategies	VMT after Reductions	VMT below 85%?
92.0%	-1.4%	90.6%	No

As shown above, VMT reductions to below the applicable threshold cannot be achieved. While not currently located in the City of San Diego, the project site is surrounded by City of San Diego land located in Mobility Zone 4. Therefore, upon annexation the project site would be considered part of Mobility Zone 4 when considering the application of the Mobility Choices Regulations. Development within Mobility Zone 4 requires payment of an Active Transportation In Lieu Fee which would be used to fund VMT-reducing infrastructure projects citywide.

Under the Annexation Scenario 2a, the requirements of the Mobility Choices Ordinance, including payment of the City of San Diego In Lieu Fee, would be required through implementation of SDMC Section 143.1101. et seq. which applies prior to issuance of a building permit.

Even with the application of CAPCOA reduction strategies and application of the Mobility Choices Ordinance including the City of San Diego Active Transportation In Lieu Fee consistent with SDMC Section 143.1101. et seq., impacts would be significant and unavoidable.

The project's environmental document will rely upon the Findings and Statement of Overriding Considerations from the Complete Communities: Housing Solutions and Mobility Choices Final EIR as mitigation to the extent feasible.

3.0 Chula Vista Project Information Form and Traffic Study Content Form

Chula Vista requires a Project Information Form (PIF) that summarizes the project description, location, site plan, site access, estimated trip generation, and methods for completing the Transportation Study. Additionally, a Transportation Study Required Content Form is also required. A completed PIF and Transportation Study Required Content Form are included in **Appendix E.**

The project includes a total of up to 221 residential dwelling units (mix of up to 67 detached dwelling units plus 154 attached multi-family units). The project is calculated to generate a total of 1,902 ADT as shown in **Table 5**.

TABLE 5: PROJECT TRIP GENERATION

Proposed Land Use		Rate	Size & Units		ADT
Residential - Single Family	10	/DU	67	DU	670
Residential - Multi Family	8	/DU	154	DU	1,232
		Totals:	**221**	DU	**1,902**

Source: SANDAG *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region,* April 2002. DU: Dwelling Unit.

# # #

Appendix A

Excerpts from OPR Technical Advisory

TECHNICAL ADVISORY

ON EVALUATING TRANSPORTATION IMPACTS IN CEQA

December 2018

D. General Principles to Guide Consideration of VMT

SB 743 directs OPR to establish specific "criteria for determining the significance of transportation impacts of projects[.]" (Pub. Resources Code, § 21099, subd. (b)(1).) In establishing this criterion, OPR was guided by the general principles contained within CEQA, the CEQA Guidelines, and applicable case law.

To assist in the determination of significance, many lead agencies rely on "thresholds of significance." The CEQA Guidelines define a "threshold of significance" to mean "an identifiable **quantitative, qualitative[12] 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." (CEQA Guidelines, § 15064.7, subd. (a) (emphasis added).) Lead agencies have discretion to develop and adopt their own, or rely on thresholds recommended by other agencies, "provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence." (*Id*. at subd. (c); *Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068.) Substantial evidence means "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached." (*Id*. at § 15384 (emphasis added); *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1108-1109.)

Additionally, the analysis leading to the determination of significance need not be perfect. The CEQA Guidelines describe the standard for adequacy of environmental analyses:

> An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to **make a decision which intelligently takes account of environmental consequences**. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is **reasonably feasible**. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The **courts have looked not for perfection** but for **adequacy**, **completeness**, and a **good faith effort** at full disclosure.

(CEQA Guidelines, § 15151 (emphasis added).)

These general principles guide OPR's recommendations regarding thresholds of significance for VMT set forth below.

[12] Generally, qualitative analyses should only be conducted when methods do not exist for undertaking a quantitative analysis.

E. Recommendations Regarding Significance Thresholds

As noted above, lead agencies have the discretion to set or apply their own thresholds of significance. (*Center for Biological Diversity v. California Dept. of Fish & Wildlife* (2015) 62 Cal.4th 204, 218-223 [lead agency had discretion to use compliance with AB 32's emissions goals as a significance threshold]; *Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th at p. 1068.) However, Section 21099 of the Public Resources Code states that the criteria for determining the significance of transportation impacts must promote: (1) reduction of greenhouse gas emissions; (2) development of multimodal transportation networks; and (3) a diversity of land uses. It further directed OPR to prepare and develop criteria for determining significance. (Pub. Resources Code, § 21099, subd. (b)(1).) This section provides OPR's suggested thresholds, as well as considerations for lead agencies that choose to adopt their own

The VMT metric can support the three statutory goals: "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), emphasis added.) However, in order for it to promote and support all three, lead agencies should select a significance threshold that aligns with state law on all three. State law concerning the development of multimodal transportation networks and diversity of land uses requires planning for and prioritizing increases in complete streets and infill development, but does not mandate a particular depth of implementation that could translate into a particular threshold of significance. Meanwhile, the State has clear quantitative targets for GHG emissions reduction set forth in law and based on scientific consensus, and the depth of VMT reduction needed to achieve those targets has been quantified. Tying VMT thresholds to GHG reduction also supports the two other statutory goals. Therefore, to ensure adequate analysis of transportation impacts, OPR recommends using quantitative VMT thresholds linked to GHG reduction targets when methods exist to do so.

Various legislative mandates and state policies establish quantitative greenhouse gas emissions reduction targets. For example:

- Assembly Bill 32 (2006) requires statewide GHG emissions reductions to 1990 levels by 2020 and continued reductions beyond 2020.

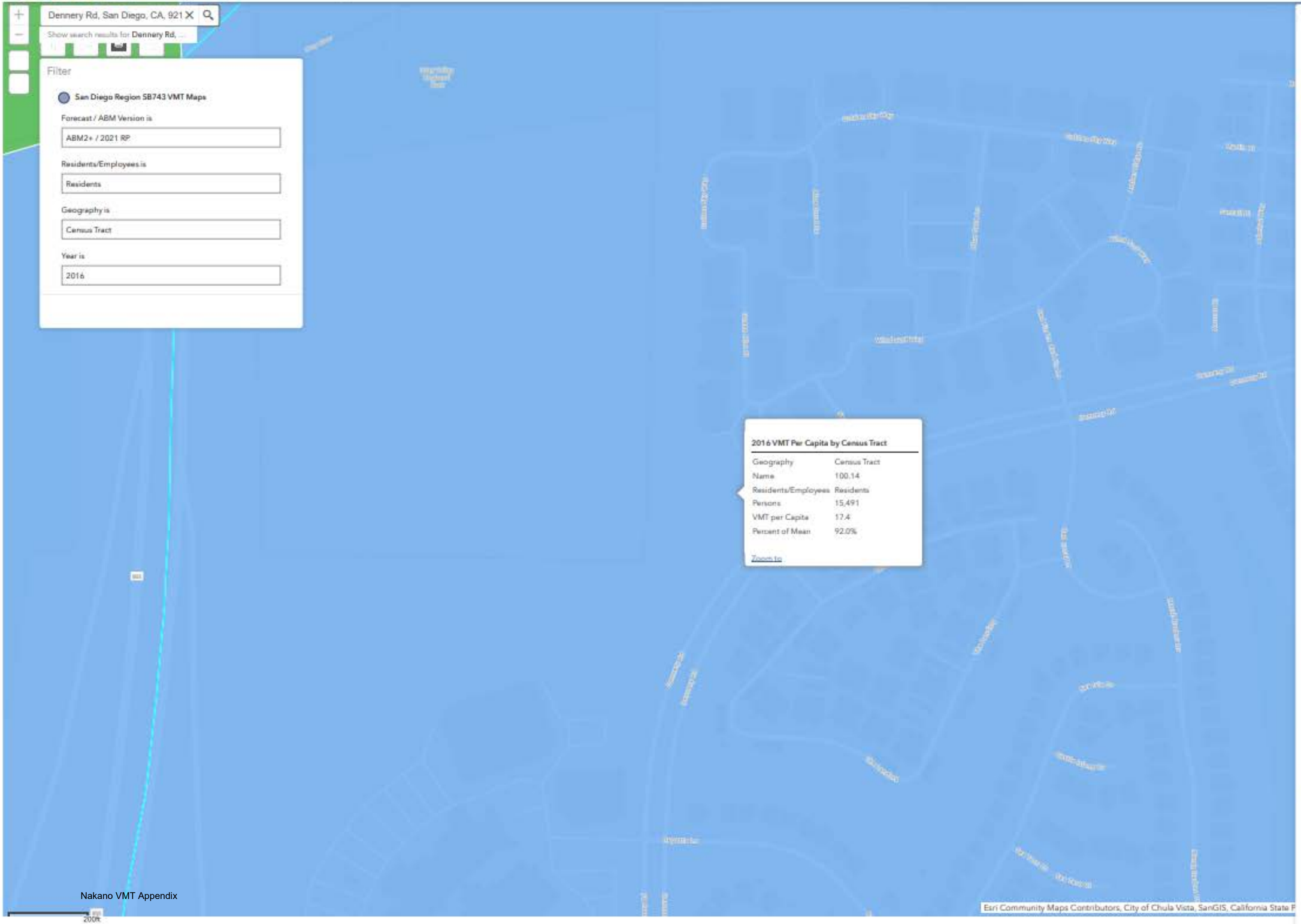
- Senate Bill 32 (2016) requires at least a 40 percent reduction in GHG emissions from 1990 levels by 2030.

- Pursuant to Senate Bill 375 (2008), the California Air Resources Board GHG emissions 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 (RTP/SCS). Current targets for the State's largest MPOs call for a 19 percent reduction in GHG emissions from cars and light trucks from 2005 emissions levels by 2035.

- Executive Order B-30-15 (2015) sets a GHG emissions reduction target of 40 percent below 1990 levels by 2030.

Appendix B

SANDAG VMT Screening Map



Map Legend / Disclaimer

Map Legend

Percent of Mean

- More than 125% of Regional Mean
- 100% to 125% of Regional Mean
- 85% to 100% of Regional Mean
- 50% to 85% of Regional Mean
- Less than 50% of Regional Mean
- No Data
- Not Enough Data

Current Data

2016 - ABM2+ / 2021 RP (Scenario ID 458)
Regional Mean = 18.9 VMT per Resident
Regional Mean = 18.9 VMT per Employee

2025 - ABM2+ / 2021 RP (Scenario ID 462)
Regional Mean = 17.7 VMT per Resident
Regional Mean = 17.0 VMT per Employee

2035 - ABM2+ / 2021 RP (Scenario ID 475)
Regional Mean = 16.6 VMT per Resident
Regional Mean = 15.3 VMT per Employee

2050 - ABM2+ / 2021 RP (Scenario ID 459)
Regional Mean = 16.0 VMT per Resident
Regional Mean = 14.3 VMT per Employee

Archived Data

2016 - ABM2 / 2019 RTP (Scenario ID 434)
Regional Mean = 19.0 VMT per Resident
Regional Mean = 27.2 VMT per Employee

Disclaimer

The maps provided by SANDAG are an interpretation of the Senate Bill 743 Technical Advisory guidelines published by the California Office of Planning and Research and are provided as a resource to the jurisdictions in the San Diego region to use as they see fit. Users of the data should exercise their professional judgment in reviewing, evaluating and analyzing VMT reduction estimate results from the tool. Each agency should consult with CEQA experts and legal counsel regarding their own CEQA practices and updates to local policies. Refer to full disclaimer and additional information relating to the use of the SB 743 VMT Map Web Application.

While the data have been tested for accuracy and are properly functioning, SANDAG disclaims any responsibility for the accuracy or correctness of the data.

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To assist SANDAG in the maintenance of the data, users should provide SANDAG, at the email address shown below, information concerning errors or discrepancies found in using the data.
tfic@sandag.org

Appendix C

CAPCOA TDM Strategies (No Annexation Scenario)

California Air Pollution Control Officers Association

Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity

Designed for Local Governments, Communities, and Project Developers

Final Draft

December 2021

Transportation

Fossil-fuel powered vehicles are the primary source of GHG emissions within the transportation sector. On-road vehicles traditionally use gasoline and diesel fuel and release emissions based on the amount of fuel combusted and the emission factor of the engine. Cleaner-fueled and electric powered vehicles can also generate GHG emissions, but often at far lower intensities.

Transportation emissions can be reduced by improving the emissions profile of the vehicle fleet or by reducing VMT. Most of the measures quantified in this Handbook aim to reduce VMT and encourage mode shifts from single-occupancy vehicles to shared (e.g., transit) or active modes of transportation (e.g., bicycle). This can be accomplished by coordinating trip reduction or incentive programs; optimizing the land use of the project study area; enhancing road, bike and pedestrian networks; implementing parking policies; or improving transit systems.

WHAT'S ELASTICITY?

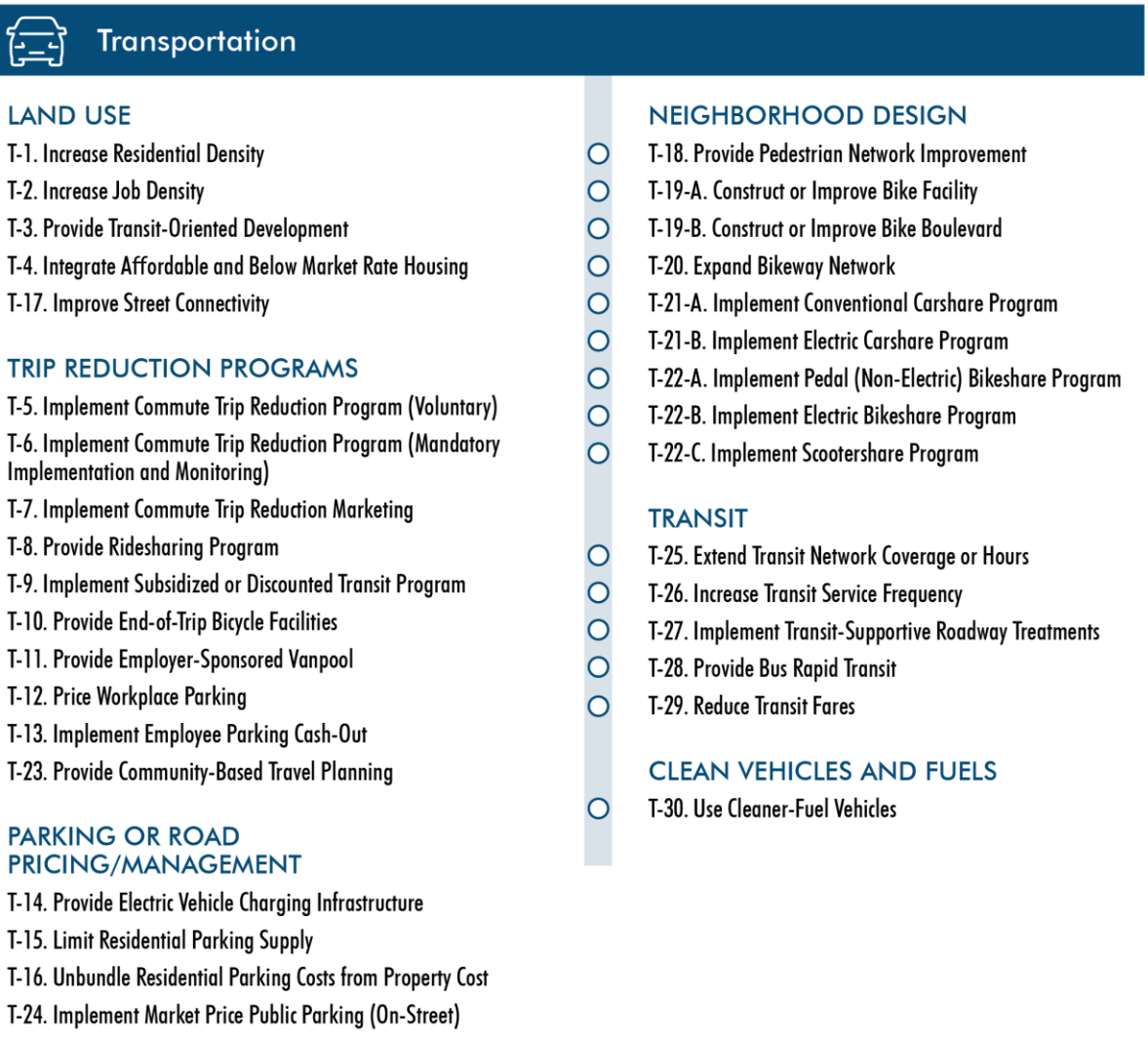
Elasticity refers to how much one variable changes, relative to a change in another variable. For example, the elasticity of a VMT reduction measure would measure how much VMT is reduced in proportion to the increase in bicycle lanes.

Most of the emission reductions are determined by evaluating the *elasticity* of a measure relative to the amount of VMT that may be reduced by the measure. A few transportation measures are aimed at improving the emissions profile of the vehicle fleet. These measures promote alternative fuels and vehicle types. The emission reductions from these measures are based on the improved emission factors and on changes to the assumed vehicle fleet mix.

This section provides guidance for combining emission reductions from transportation measures and adjusting VMT reductions to expected GHG savings. The measure factsheets and quantification methods for individual measures follow. Use the graphic on the following page to click on an individual measure to navigate directly to the measure's factsheet.

Selecting and Combining Transportation Measures

Depending on how VMT has been quantified for a project or program, users should exercise caution when selecting transportation measures to avoid double counting VMT benefits that may already be accounted for in the model used to produce the unmitigated or baseline VMT estimate. For example, regional travel demand models are generally sensitive to built environment and transit service variables (e.g., density, proximity to transit). VMT estimates developed for a project or program that use such models may, therefore, already account for VMT reductions associated with certain measures in this Handbook (e.g., T-1, *Increase Residential Density*).



Interactions between transportation measures are complex and sometimes counterintuitive, whereby combining measures can have a substantive impact on reported emission reductions. To safeguard the accuracy and reliability of the methods, while maintaining their ease of use, the following rules should be followed when combining reductions achieved by transportation measures.

Combining Measures Across Scales

The first level of organization for the transportation measures is the scale of application. There are 16 quantified measures at the Project/Site scale that can be combined with each other and 17 quantified measures at the Plan/Community scale that can be combined with each other.[4] *The GHG reductions of transportation measures from different scales of application should never be combined.* While it may be possible that a user's project involves measures that affect vehicle trips or VMT at both scales, it is likely that combining the percent reduction from measures of different scales would not be valid. This rule does not apply to non-transportation measures that calculate the emissions reduction in terms of absolute emissions.

[4] There is one additional quantified transportation measure: Measure T-30, *Use Cleaner-Fuel Vehicles*. All below discussion related to combining measures and determining maximums does not apply to this measure, which is part of the Clean Vehicles and Fuels subsector.

T-1. Increase Residential Density

GHG Mitigation Potential

Up to 30.0% of GHG emissions from project VMT in the study area

Co-Benefits (icon key on pg. 34)

Climate Resilience

Increased density can put people closer to resources they may need to access during an extreme weather event. Increased density can also shorten commutes, decreasing the amount of time people are on the road and exposed to hazards such as extreme heat or flooding.

Health and Equity Considerations

Neighborhoods should include different types of housing to support a variety of household sizes, age ranges, and incomes.

Measure Description

This measure accounts for the VMT reduction achieved by a project that is designed with a higher density of dwelling units (du) compared to the average residential density in the U.S. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. Increasing residential density results in shorter and fewer trips by single-occupancy vehicles and thus a reduction in GHG emissions. This measure is best quantified when applied to larger developments and developments where the density is somewhat similar to the surrounding area due to the underlying research being founded in data from the neighborhood level.

Subsector

Land Use

Locational Context

Urban, suburban

Scale of Application

Project/Site

Implementation Requirements

This measure is most accurately quantified when applied to larger developments and/or developments where the density is somewhat similar to the surrounding neighborhood.

Cost Considerations

Depending on the location, increasing residential density may increase housing and development costs. However, the costs of providing public services, such as health care, education, policing, and transit, are generally lower in more dense areas where things are closer together. Infrastructure that provides drinking water and electricity also operates more efficiently when the service and transmission area is reduced. Local governments may provide approval streamlining benefits or financial incentives for infill and high-density residential projects.

Expanded Mitigation Options

When paired with Measure T-2, *Increase Job Density*, the cumulative densification from these measures can result in a highly walkable and bikeable area, yielding increased co-benefits in VMT reductions, improved public health, and social equity.

GHG Reduction Formula

$$A = \frac{B - C}{C} \times D$$

GHG Calculation Variables

ID	Variable	Value	Unit	Source
Output				
A	Percent reduction in GHG emissions from project VMT in study area	0–30.0	%	calculated
User Inputs				
B	Residential density of project development	[ ]	du/acre	user input
Constants, Assumptions, and Available Defaults				
C	Residential density of typical development	9.1	du/acre	Ewing et al. 2007
D	Elasticity of VMT with respect to residential density	-0.22	unitless	Stevens 2016

Further explanation of key variables:

- (C) – The residential density of typical development is based on the blended average density of residential development in the U.S. forecasted for 2025. This estimate includes apartments, condominiums, and townhouses, as well as detached single-family housing on both small and large lots. An acre in this context is defined as an acre of developed land, not including streets, school sites, parks, and other undevelopable land. If reductions are being calculated from a specific baseline derived from a travel demand forecasting model, the residential density of the relevant transportation analysis zone should be used instead of the value for a typical development.
- (D) – A meta-regression analysis of five studies that controlled for self-selection found that a 0.22 percent decrease in VMT occurs for every 1 percent increase in residential density (Stevens 2016).

GHG Calculation Caps or Maximums

Measure Maximum

(A_{max}) The percent reduction in GHG emissions (A) is capped at 30 percent. The purpose for the 30 percent cap is to limit the influence of any single built environmental factor (such as density). Projects that implement multiple land use strategies (e.g., density, design, diversity) will show more of a reduction than relying on improvements from a single built environment factor.

Subsector Maximum

($\sum A_{max_{T\text{-}1 \text{ through } T\text{-}4}} \leq 65\%$) This measure is in the Land Use subsector. This subcategory includes Measures T-1 through T-4. The VMT reduction from the combined implementation of all measures within this subsector is capped at 65 percent.

Example GHG Reduction Quantification

The user reduces VMT by increasing the residential density of the project study area. In this example, the project's residential density would be 15 du per acre (B), which would reduce GHG emissions from project VMT by 14.2 percent.

$$A = \frac{15 \frac{du}{ac} - 9.1 \frac{du}{ac}}{9.1 \frac{du}{ac}} \times -0.22 = -14.2\%$$

Quantified Co-Benefits

Improved Local Air Quality

The percent reduction in GHG emissions (A) would be the same as the percent reduction in NO_X, CO, NO_2, SO_2, and PM. Reductions in ROG emissions can be calculated by multiplying the percent reduction in GHG emissions (A) by an adjustment factor of 87 percent. See *Adjusting VMT Reductions to Emission Reductions* above for further discussion.

Energy and Fuel Savings

The percent reduction in vehicle fuel consumption would be the same as the percent reduction in GHG emissions (A).

VMT Reductions

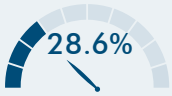
The percent reduction in VMT would be the same as the percent reduction in GHG emissions (A).

Sources

- Ewing, R., K. Bartholomew, S. Winkelman, J. Walters, and D. Chen. 2007. *Growing Cooler: The Evidence on Urban Development and Climate Change*. October. Available: https://www.nrdc.org/sites/default/files/cit_07092401a.pdf. Accessed: January 2021.
- Stevens, M. 2016. Does Compact Development Make People Drive Less? *Journal of the American Planning Association* 83:1(7–18), DOI: 10.1080/01944363.2016.1240044. November. Available: https://www.researchgate.net/publication/309890412_Does_Compact_Development_Make_People_Drive_Less. Accessed: January 2021.

T-4. Integrate Affordable and Below Market Rate Housing

GHG Mitigation Potential



Up to 28.6% of GHG emissions from project/site multifamily residential VMT

Co-Benefits (icon key on pg. 34)

Climate Resilience

Increasing affordable housing creates the opportunity for a greater diversity of people to be closer to their desired destinations and the resources they may need to access during an extreme weather event. Close proximity to destinations allows for more opportunities to use active transportation and transit and to be less reliant on private vehicles. Alleviating the housing-cost burden also enables more people to remain housed, and increases people's capacity to respond to disruptions, including climate impacts.

Health and Equity Considerations

Neighborhoods should include different types of housing to support a variety of household sizes, age ranges, abilities, and incomes.

Measure Description

This measure requires below market rate (BMR) housing. BMR housing provides greater opportunity for lower income families to live closer to job centers and achieve a jobs/housing match near transit. It is also an important strategy to address the limited availability of affordable housing that might force residents to live far away from jobs or school, requiring longer commutes. The quantification method for this measure accounts for VMT reductions achieved for multifamily residential projects that are deed restricted or otherwise permanently dedicated as affordable housing.

Subsector

Land Use

Locational Context

Urban, suburban

Scale of Application

Project/Site

Implementation Requirements

Multifamily residential units must be permanently dedicated as affordable for lower income families. The California Department of Housing and Community Development (2021) defines lower-income as 80 percent of area median income or below, and affordable housing as costing 30 percent of gross household income or less.

Cost Considerations

Depending on the source of the affordable subsidy, BMR housing may have implications for development costs but would also have the benefit of reducing costs for public services, similar to Measure T-1, *Increase Residential Density*.

Expanded Mitigation Options

Pair with Measure T-1, *Increase Residential Density*, and Measure T-2, *Increase Job Density*, to achieve greater population and employment diversity.

GHG Reduction Formula

$A = B \times C$

GHG Calculation Variables

ID	Variable	Value	Unit	Source
Output				
A	Percent reduction in GHG emissions from Project/Site VMT for multifamily residential developments	0–28.6	%	calculated
User Inputs				
B	Percent of multifamily units permanently dedicated as affordable	0–100	%	user input
Constants, Assumptions, and Available Defaults				
C	Percent reduction in VMT for qualified units compared to market rate units	-28.6	%	ITE 2021

Further explanation of key variables:

- (B) – This refers to percent of multifamily units in the project that are deed restricted or otherwise permanently dedicated as affordable.
- (C) – The 11th Edition of the *ITE Trip Generation Manual* (ITE 2021) contains daily vehicle trip rates for market rate multifamily housing that is low-rise and not close to transit (ITE code 221) as well as affordable multifamily housing (ITE code 223). While these rates do not account for trip length, they serve as a proxy for the expected difference in vehicle trip generation and VMT generation presuming similar trip lengths for both types of land use. If the user has information about trip length differences between market rate and affordable housing, then adjusting the percent reduction accordingly is recommended.

  Users should note that the ITE trip rate estimates are based on a small sample of studies for the affordable housing rate and that no stratification of affordable housing by number of stories was available. This is an important distinction since the multifamily low-rise vehicle trip rate applies to four or fewer stories. Therefore, this measure may not apply to affordable housing projects with more than four stories.

GHG Calculation Caps or Maximums

Measure Maximum

(A_{max}) The maximum GHG reduction from this measure is 28.6 percent. This maximum scenario is presented in the below example quantification.

Subsector Maximum

($\sum A_{max_{T\text{-}1 \text{ through } T\text{-}4}} \leq 65\%$) This measure is in the Land Use subsector. This subsector includes Measures T-1 through T-4. The VMT reduction from the combined implementation of all measures within this subsector is capped at 65 percent.

Example GHG Reduction Quantification

The user reduces project VMT by requiring a portion of the multifamily residential units to be permanently dedicated as affordable. In this example, the percent of units (B) is 100 percent, which would reduce GHG emissions from VMT by 28.6 percent.

$$A = 100\% \times -28.6\% = -28.6\%$$

Quantified Co-Benefits

Improved Local Air Quality

The percent reduction in GHG emissions (A) would be the same as the percent reduction in NO_X, CO, NO_2, SO_2, and PM. Reductions in ROG emissions can be calculated by multiplying the percent reduction in GHG emissions (A) by an adjustment factor of 87 percent. See *Adjusting VMT Reductions to Emission Reductions* above for further discussion.

Energy and Fuel Savings

The percent reduction in vehicle fuel consumption would be the same as the percent reduction in GHG emissions (A).

VMT Reductions

The percent reduction in VMT would be the same as the percent reduction in GHG emissions (A).

Sources

- California Department of Housing and Community Development. 2021. *Income Limits*. Available: https://www.hcd.ca.gov/grants-funding/income-limits/index.shtml#:~:text=%E2%80%9CAffordable%20housing%20cost%E2%80%9D%20for%20lower,of%20gross%20income%2C%20with%20variations. Accessed; November 2021.
- Institute of Transportation Engineers (ITE). 2021. *Trip Generation Manual*. 11th Edition. Available: https://www.ite.org/technical-resources/topics/trip-and-parking-generation/. Accessed; November 2021.

VMT Transportation Mitigation Measures (CAPCOA December 2021)				
VMT Mitigation	**Description**	**Possible % Reduction**	**VMT % Reduction**	**Calculations**
T-1. Increase Residential Density	A project with increased density results in shorter and fewer trips by single-occupancy vehicles. Project is at 9.3 du/ac.	0-30%	-0.5%	% Reduction A = (B-C)/C X D, where **B = 9.3 du/acre** (221 du/23.8 acres). **C = 9.1** from CAPCOA 2021 page 71**. D = -0.22** Elasticity of VMT from page 71 of 2021 CAPCOA. A = ((9.3-9.1) / 9.1) x -0.22 = -0.5%
T-4. Integrate Affordable and Below Market Rate Housing	Project includes 22 affordable units (11 low income and 11 moderate income).	0-28.6%	-1.4%	% Reduction A = B x C, where **B = 5.0%** units (11/221) of multi-family units dedicated as affordable (deed restricted per pg 81 of 2021 CAPCOA). **C = -28.6%** reduction in VMT for qualified units compared to market rate units per pg 81 of 2021 CAPCOA. A = 5.0% x -28.6% = -1.4%
Resident VMT (SANDAG ABM2+ Series 14 2016 Screening Map Census Tract 100.14) = 92.0%				
Combined VMT Reduction = 1 - [(1-A) x (1-B)] = 1 -[(1-0.5%)x(1-1.4%)] = 1.9%				
Project VMT with Mitigation = 92.0% - 1.9% = 90.1%				

Notes: Mitigation Measure T-1 is applicable to this project in accordance with the City of Chula Vista Transportation Study Guidelines.

Appendix D

CAPCOA TDM Strategies (Annexation Scenario)

California Air Pollution Control Officers Association

Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity

Designed for Local Governments, Communities, and Project Developers

Final Draft

December 2021

Transportation

Fossil-fuel powered vehicles are the primary source of GHG emissions within the transportation sector. On-road vehicles traditionally use gasoline and diesel fuel and release emissions based on the amount of fuel combusted and the emission factor of the engine. Cleaner-fueled and electric powered vehicles can also generate GHG emissions, but often at far lower intensities.

Transportation emissions can be reduced by improving the emissions profile of the vehicle fleet or by reducing VMT. Most of the measures quantified in this Handbook aim to reduce VMT and encourage mode shifts from single-occupancy vehicles to shared (e.g., transit) or active modes of transportation (e.g., bicycle). This can be accomplished by coordinating trip reduction or incentive programs; optimizing the land use of the project study area; enhancing road, bike and pedestrian networks; implementing parking policies; or improving transit systems.

WHAT'S ELASTICITY?

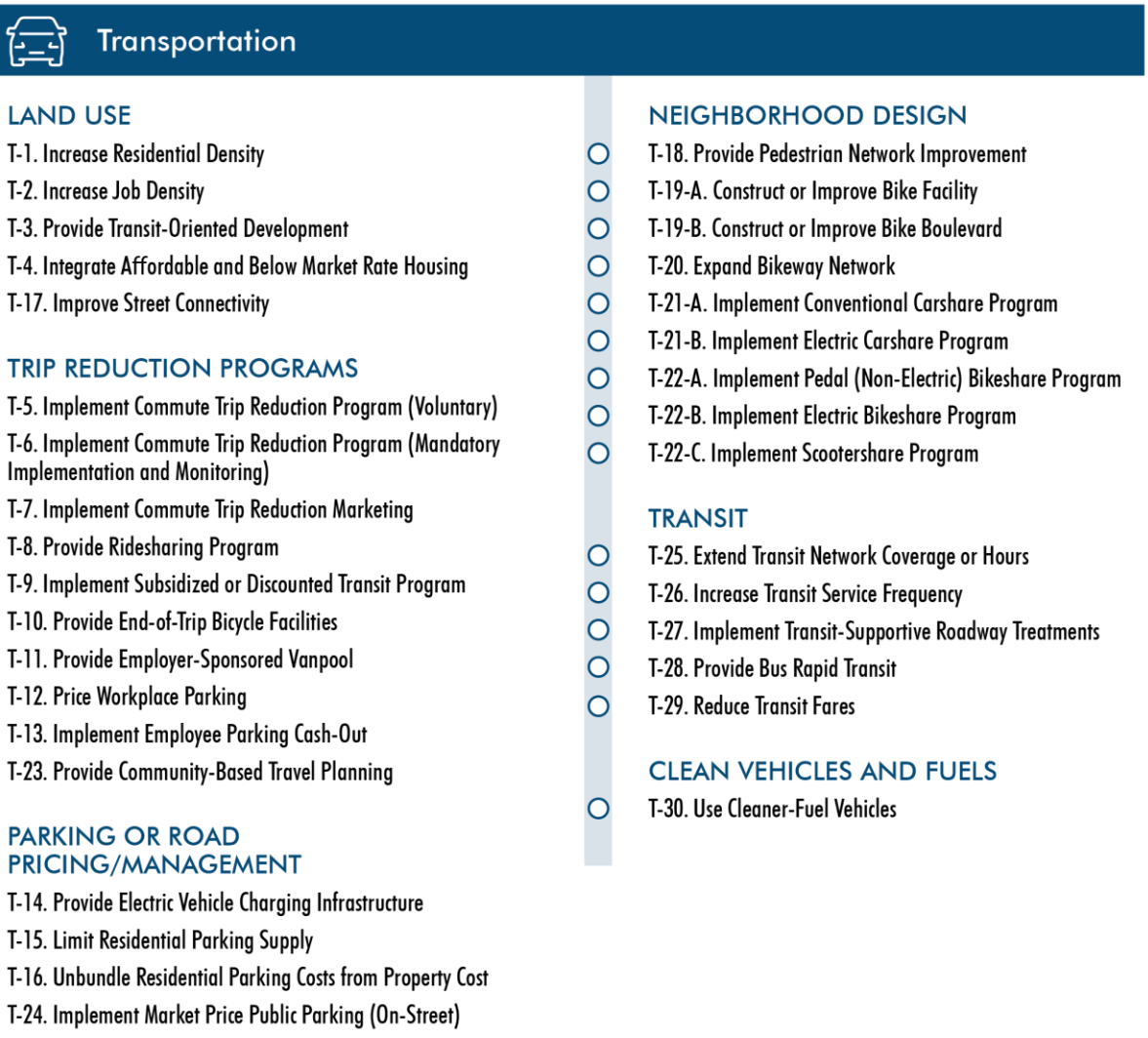
Elasticity refers to how much one variable changes, relative to a change in another variable. For example, the elasticity of a VMT reduction measure would measure how much VMT is reduced in proportion to the increase in bicycle lanes.

Most of the emission reductions are determined by evaluating the *elasticity* of a measure relative to the amount of VMT that may be reduced by the measure. A few transportation measures are aimed at improving the emissions profile of the vehicle fleet. These measures promote alternative fuels and vehicle types. The emission reductions from these measures are based on the improved emission factors and on changes to the assumed vehicle fleet mix.

This section provides guidance for combining emission reductions from transportation measures and adjusting VMT reductions to expected GHG savings. The measure factsheets and quantification methods for individual measures follow. Use the graphic on the following page to click on an individual measure to navigate directly to the measure's factsheet.

Selecting and Combining Transportation Measures

Depending on how VMT has been quantified for a project or program, users should exercise caution when selecting transportation measures to avoid double counting VMT benefits that may already be accounted for in the model used to produce the unmitigated or baseline VMT estimate. For example, regional travel demand models are generally sensitive to built environment and transit service variables (e.g., density, proximity to transit). VMT estimates developed for a project or program that use such models may, therefore, already account for VMT reductions associated with certain measures in this Handbook (e.g., T-1, *Increase Residential Density*).



Interactions between transportation measures are complex and sometimes counterintuitive, whereby combining measures can have a substantive impact on reported emission reductions. To safeguard the accuracy and reliability of the methods, while maintaining their ease of use, the following rules should be followed when combining reductions achieved by transportation measures.

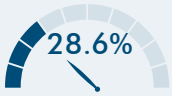
Combining Measures Across Scales

The first level of organization for the transportation measures is the scale of application. There are 16 quantified measures at the Project/Site scale that can be combined with each other and 17 quantified measures at the Plan/Community scale that can be combined with each other.[4] *The GHG reductions of transportation measures from different scales of application should never be combined.* While it may be possible that a user's project involves measures that affect vehicle trips or VMT at both scales, it is likely that combining the percent reduction from measures of different scales would not be valid. This rule does not apply to non-transportation measures that calculate the emissions reduction in terms of absolute emissions.

[4] There is one additional quantified transportation measure: Measure T-30, *Use Cleaner-Fuel Vehicles*. All below discussion related to combining measures and determining maximums does not apply to this measure, which is part of the Clean Vehicles and Fuels subsector.

T-4. Integrate Affordable and Below Market Rate Housing

GHG Mitigation Potential



Up to 28.6% of GHG emissions from project/site multifamily residential VMT

Co-Benefits (icon key on pg. 34)

Climate Resilience

Increasing affordable housing creates the opportunity for a greater diversity of people to be closer to their desired destinations and the resources they may need to access during an extreme weather event. Close proximity to destinations allows for more opportunities to use active transportation and transit and to be less reliant on private vehicles. Alleviating the housing-cost burden also enables more people to remain housed, and increases people's capacity to respond to disruptions, including climate impacts.

Health and Equity Considerations

Neighborhoods should include different types of housing to support a variety of household sizes, age ranges, abilities, and incomes.

Measure Description

This measure requires below market rate (BMR) housing. BMR housing provides greater opportunity for lower income families to live closer to job centers and achieve a jobs/housing match near transit. It is also an important strategy to address the limited availability of affordable housing that might force residents to live far away from jobs or school, requiring longer commutes. The quantification method for this measure accounts for VMT reductions achieved for multifamily residential projects that are deed restricted or otherwise permanently dedicated as affordable housing.

Subsector

Land Use

Locational Context

Urban, suburban

Scale of Application

Project/Site

Implementation Requirements

Multifamily residential units must be permanently dedicated as affordable for lower income families. The California Department of Housing and Community Development (2021) defines lower-income as 80 percent of area median income or below, and affordable housing as costing 30 percent of gross household income or less.

Cost Considerations

Depending on the source of the affordable subsidy, BMR housing may have implications for development costs but would also have the benefit of reducing costs for public services, similar to Measure T-1, *Increase Residential Density*.

Expanded Mitigation Options

Pair with Measure T-1, *Increase Residential Density*, and Measure T-2, *Increase Job Density*, to achieve greater population and employment diversity.

GHG Reduction Formula

$A = B \times C$

GHG Calculation Variables

ID	Variable	Value	Unit	Source
Output				
A	Percent reduction in GHG emissions from Project/Site VMT for multifamily residential developments	0–28.6	%	calculated
User Inputs				
B	Percent of multifamily units permanently dedicated as affordable	0–100	%	user input
Constants, Assumptions, and Available Defaults				
C	Percent reduction in VMT for qualified units compared to market rate units	-28.6	%	ITE 2021

Further explanation of key variables:

- (B) – This refers to percent of multifamily units in the project that are deed restricted or otherwise permanently dedicated as affordable.
- (C) – The 11th Edition of the *ITE Trip Generation Manual* (ITE 2021) contains daily vehicle trip rates for market rate multifamily housing that is low-rise and not close to transit (ITE code 221) as well as affordable multifamily housing (ITE code 223). While these rates do not account for trip length, they serve as a proxy for the expected difference in vehicle trip generation and VMT generation presuming similar trip lengths for both types of land use. If the user has information about trip length differences between market rate and affordable housing, then adjusting the percent reduction accordingly is recommended.

  Users should note that the ITE trip rate estimates are based on a small sample of studies for the affordable housing rate and that no stratification of affordable housing by number of stories was available. This is an important distinction since the multifamily low-rise vehicle trip rate applies to four or fewer stories. Therefore, this measure may not apply to affordable housing projects with more than four stories.

GHG Calculation Caps or Maximums

Measure Maximum

(A_{max}) The maximum GHG reduction from this measure is 28.6 percent. This maximum scenario is presented in the below example quantification.

Subsector Maximum

($\sum A_{max_{T\text{-}1 \text{ through } T\text{-}4}} \leq 65\%$) This measure is in the Land Use subsector. This subsector includes Measures T-1 through T-4. The VMT reduction from the combined implementation of all measures within this subsector is capped at 65 percent.

Example GHG Reduction Quantification

The user reduces project VMT by requiring a portion of the multifamily residential units to be permanently dedicated as affordable. In this example, the percent of units (B) is 100 percent, which would reduce GHG emissions from VMT by 28.6 percent.

$$A = 100\% \times -28.6\% = -28.6\%$$

Quantified Co-Benefits

Improved Local Air Quality

The percent reduction in GHG emissions (A) would be the same as the percent reduction in NO_X, CO, NO_2, SO_2, and PM. Reductions in ROG emissions can be calculated by multiplying the percent reduction in GHG emissions (A) by an adjustment factor of 87 percent. See *Adjusting VMT Reductions to Emission Reductions* above for further discussion.

Energy and Fuel Savings

The percent reduction in vehicle fuel consumption would be the same as the percent reduction in GHG emissions (A).

VMT Reductions

The percent reduction in VMT would be the same as the percent reduction in GHG emissions (A).

Sources

- California Department of Housing and Community Development. 2021. *Income Limits*. Available: https://www.hcd.ca.gov/grants-funding/income-limits/index.shtml#:~:text=%E2%80%9CAffordable%20housing%20cost%E2%80%9D%20for%20lower,of%20gross%20income%2C%20with%20variations. Accessed; November 2021.
- Institute of Transportation Engineers (ITE). 2021. *Trip Generation Manual*. 11th Edition. Available: https://www.ite.org/technical-resources/topics/trip-and-parking-generation/. Accessed; November 2021.

VMT Transportation Mitigation Measures (CAPCOA December 2021)				
VMT Mitigation	**Description**	**Possible % Reduction**	**VMT % Reduction**	**Calculations**
T-4. Integrate Affordable and Below Market Rate Housing	Project includes 22 affordable units (11 low income and 11 moderate income).	0-28.6%	-1.4%	% Reduction A = B x C, where **B = 5.0%** units (11/221) of multi-family units dedicated as affordable (deed restricted per pg 81 of 2021 CAPCOA). **C = -28.6%** reduction in VMT for qualified units compared to market rate units per pg 81 of 2021 CAPCOA. A = 5.0% x -28.6% = -1.4%
Resident VMT (SANDAG ABM2+ Series 14 2016 Screening Map Census Tract 100.14) = 92.0%				
Project VMT with Mitigation = 92.0% - 1.4% = 90.6%				

Appendix E

Chula Vista Project Information Form and Traffic Study Required Content Form

APPENDIX A

Project Information Form for Transportation Studies

The first page of the Project Information Form (PIF) is to be completed by the applicant. If the project meets the exemption criteria shown below (subject to verification by City staff), then no further analysis is required and the PIF may be submitted with only the first page completed. If none of the boxes are checked, the remaining sections of the PIF (pages 2-4) must be completed by a consultant meeting professional qualifications described in Section 1.5 of the TSG (see "Consultant" section below). The PIF is subject to change as new project information arises.

General Project Information and Description

Owner/Applicant Information

Name:	Tri Pointe Homes
Address:	13520 Evening Creek Drive North, STE 300 SD 92128
Phone Number:	858-794-2510
Email:	Allen.Kashani@tripointehomes.com

Project Information

Project Name:	Nakano		
Project Address:	450 Block of Dennery Road, San Diego		
APN:	6240710200		
Land Use Designation:	Open Space to (RH)	Zoning Designation:	From A-8 to R3P

Project Description

Land Uses and Intensities *(units, square feet, etc.)*:	221 Homes (67 detached units + 154 attached MF units)		
Gross and Developable Acreage:			
Vehicle Parking Required *(per relevant City planning document (e.g., CVMC, SPA Plan, etc.)*:	2 in garage	Vehicle Parking Spaces Proposed:	2 in garage
Accessible Spaces:		Bicycle Storage Capacity *(racks and secure storage)*:	in garage
Motorcycle Spaces:	in garage	EV Parking Spaces:	0

Exemptions

Check the box that applies to your project:

☐	Intensification of residential development on a residential parcel with a net increase of no more than 20 multi-family units (does not apply if non-residential uses are proposed).	☐	Review or approval of a project that is strictly consistent with the land uses evaluated in the recently certified CEQA document within 5 years (attach documentation).
☐	Conditional use permit for alcohol and temporary sales offices.	☐	Zoning variance for deviations from zoning standards only.
☐	Facilities for the exclusive use of an existing residential development that are located within or immediately adjacent to that project, such as a clubhouse, a pool, or multi-purpose room.	☐	Historic designation or Certificate of Appropriateness, provided there is no change in land use.
☐	Cell phone sites or towers.	☐	Minor restaurant expansion, provided there is no increase in seating or drive-through lanes.

Consultant (CA Licensed Traffic Engineer or CA Licensed Civil Engineer with Traffic Engineering Expertise)

Name of Firm:	LOS Engineering, Inc		
Project Manager:	Justin Rasas, P.E.	License(s):	P.E., T.E., PTOE
Email Address:	Justin@losengineering.com		
Telephone:	619-890-1253		

Trip Generation (Attach Traffic Generation Table with Rates and Daily and Peak Hour Volumes)

[Use the SANDAG (Not So) Brief Guide of Vehicular Trip Generation]

Total Daily Trips:	1,902	Pass-by Trips:	0
Internal Capture:	0	Previous Use Credits: *(Driveway count or published SANDAG/ITE rate at City's discretion)*:	0
Alternative Mode Reduction:	None	Net Daily Trips:	1,902

Site Plan

Attach 11x17 copies of the project location/vicinity map and site plan containing the following:

- Driveway locations and access type
- Pedestrian access, bicycle access, and on-site pedestrian circulation
- Location and distance to closest existing transit stop (measure as walking distance to project entrance or middle of parcel)
- Location of any planned sidewalks or bikeways identified in the City of Chula Vista Active Transportation Plan within ½ mile of the project

CEQA Transportation Analysis Screening

To determine if your project is screened from VMT analysis, review the Project Type Screening and the Project Location Screening tables below. If "No" is checked for any project type or land use applicable to your project, the project is not screened out and must complete VMT analysis in accordance with the analysis requirements outline in the City of Chula Vista *Transportation Study Guidelines (TSG)* Chapter 3.

Project Type Screening

	1. Select the Land Uses that apply to your project 2. Answer the questions for each Land Use that applies to your project *(if "Yes" is indicated in any land use category below, then that land use (or a portion of the land use) is screened from CEQA Transportation Analysis)* *Note: All responses must be documented and supported by substantial evidence.*	**Screened Out? (Mark Yes or No)** Yes	No
☐	**1. Locally Serving Retail Project** a. Is the project less than 125,000 square feet and serving the local community? The City may request a market capture study that identifies local market capture to the City's satisfaction.	☐	●
☐	**2. Locally Serving Public Facility or Community Purpose Facility** a. Is the project a public facility or Community Purpose Facility that serves the local community? (see TSG Section 3.3)	☐	●

☐	**3. Small Residential and/or Employment Project** a. Does the project generate less than 200 net daily trips?	☐	●
☐	**4. Infill Affordable Housing** a. Is the project composed of deed-restricted affordable housing units, and has the following characteristics: i. Is an infill project; ii. Is close to a transit stop or station; and iii. Project-provided parking does not exceed parking required by the Chula Vista Municipal Code?	☐	●
☐	**5. Redevelopment Project** a. Does the project result in a net decrease in total Project VMT than the existing use?	☐	●

Project Location Screening

		Screened Out? (Mark Yes or No)	
	1. Select the Land Uses that apply to your project 2. Answer the questions for each Land Use that applies to your project *(if "Yes" is indicated in any land use category below, then that land use (or a portion of the land use) is screened from CEQA Transportation Analysis)*	Yes	No
☑	**1. Residential** a. Is the project located in a VMT-efficient area (15% or more below the regional average) using the Chula Vista screening maps for VMT/Capita? View VMT/Capita map here: https://cvgis.maps.arcgis.com/apps/webappviewer/index.html?id=f0d05a4a014841d588bb66891500b34d	☐	●
☐	**2. Employment** *(not including Industrial Employment)* a. Is the project located in a VMT-efficient area (15% or more below the regional average) using the City of Chula Vista screening maps for VMT/Employee? View VMT/Employee map here: https://cvgis.maps.arcgis.com/apps/webappviewer/index.html?id=d80a3cddc1964f8c88dafef234147e98	☐	☐
☐	**3. Industrial Employment** a. Is the project located in a VMT-efficient area (at or below the regional average) using the City of Chula Vista screening maps for VMT/Employee?	☐	☐
☐	**4. Within a transit buffer** a. Is the project in a transit priority area or within ½ mile of a stop along a high quality transit corridor, and has the following project characteristics? i. Has a Floor Area Ratio (FAR) of more than 0.75 ii. Includes no more than the minimum parking for use by residents, customers, or employees of the project than required by the jurisdiction iii. Is consistent with the City of Chula Vista General Plan iv. Does not include a smaller number of units that previously on the project site v. Does not replace affordable residential units with moderate- or high-income residential units.	☐	☐

Local Mobility Analysis Screening

Does this project generate less than 200 daily trips (after adjustments)?	☐ Yes	☑ No

If yes, the project does not need to complete an LMA. If no, continue to next question to determine study extents.

Is this project consistent with Relevant City Planning Documents (e.g., General Plan, SPA Plan, Specific Plan)?	☐ Yes	☑ No

Refer to the City of Chula Vista Transportation Study Guidelines (TSG), Chapter 4, to determine study extents based on the project's trip generation and consistency with the General Plan.

Provide attach a list or map of proposed study intersections in accordance with the requirements outlined in the TSG, Chapter 4.

APPENDIX B

Transportation Study Required Content Form

This document is to be prepared by Consultant and submitted with Transportation Study.

Name of Transportation Study:	Nakano 221 Dwelling Units
Preparer:	LOS Engineering, Inc.
Date Submitted:	June 2022
Date Received:	

Page # or Appendix: *(completed by preparer)*	Required Content	Satisfactory? *(completed by City)* YES	NO
	Required Content, all Transportation Studies		
Separate	**Project Information Form, including required attachments**	☐	☐
I	**Cover Page Listing Preparers (Analyst, Project Manager) for CEQA Analysis and LMA**	☐	☐
Ii	**Table of Contents, Lists of Appendices, Figures, and Tables**	☐	☐
Ii	**List of Acronyms**	☐	☐
Iii	**Executive Summary, including:** • Project Screening Results • Significance of CEQA Impacts • Mitigation Measures • Residual Impacts with Mitigation Incorporated • Required Improvements from LMA • Preparer Qualifications for CEQA and/or LMA	☐	☐
1-3	**Introduction, including:** • Purpose of the Transportation Study • Regional vicinity map • Map showing local transportation facilities, all modes • Site plan	☐	☐

Page # or Appendix: *(completed by preparer)*	Required Content	Satisfactory? *(completed by City)* YES	NO
	Required Content, all Transportation Studies (cont.)		
1, 18	**General project description and background information:** • Project description (land use type, intensity, etc.) • Projected opening year • Total (and net) daily and peak hour traffic generation • Existing and proposed zoning and land use designation • Consistency with General Plan Land Use Map • Parking requirements and proposed parking provided	☐	☐
	Required Content, CEQA Analysis (VMT) **(If Project Meets Screening Criteria)** *See TSG Chapter 3 and Appendix E* CEQA Analysis (VMT) should be included in Volume 1 of the Transportation Study.		
NA	**Documentation of screening analysis and conclusions, citing relevant guidance in TSG Chapter 2**	☐	☐
NA	**Project's consistency with SB 743's legislative intent**	☐	☐
NA	**CEQA Conclusion (i.e., presumed less than significant)**	☐	☐
	Required Content, CEQA Analysis (VMT) **(If Project Does Not Meet Screening Criteria)** *See TSG Chapter 3 and Appendix E* CEQA Analysis (VMT) should be included in Volume 1 of the Transportation Study.		
VMT pg4	**Documentation of VMT estimation, citing TSG Chapter 3**	☐	☐
VMT pg4	**Document significance of VMT impacts**	☐	☐
VMT pg5	**Identify feasible mitigation measures for significant impacts**	☐	☐
VMT pg6	**Determine residual impacts with mitigation incorporated**	☐	☐
	Required Content, Non-CEQA Analysis (LMA) **(Assuming No LMA is Required)** *See TSG Chapter 4;* Non-CEQA Analysis should be included in Volume 2 of the Transportation Study.		
NA	**Documentation that no LMA is required, citing relevant guidance in TSG Chapter 4**	☐	☐

Page # or Appendix: *(completed by preparer)*	Required Content	Satisfactory? *(completed by City)* YES	NO
	Required Content, Non-CEQA Analysis (LMA) **(Assuming LMA is Required)** *See TSG Chapter 4* Non-CEQA Analysis should be included in Volume 2 of the Transportation Study.		
LMA pg 10	**Analysis methodology, including:** • Statement that LMA is not a CEQA Analysis (note: do not use CEQA terms such as "mitigation measure" or "significant impact" in LMA) • Identification of analysis scenarios, citing TSG Ch. 4 • Analysis procedures, per TSG Chapter 4 • Examples of substantial traffic effects that would trigger improvements • Study area definition, citing TSG Chapter 4 (Exhibit)	☐	☐
LMA pg 5-13	**Existing conditions, including:** • Existing intersection lane geometry and traffic control (Exhibit) • Existing pedestrian, bicycle, and transit facilities (Exhibit) • Existing peak hour traffic, pedestrian, and bicycle counts (Exhibit, Appendix)	☐	☐
LMA pg 18-20	**Project traffic, including:** • Traffic generation (Table) • Documentation of method used for traffic distribution • Traffic assignment (Exhibit)	☐	☐
LMA pg 21-35	**Future conditions, including:** • Documentation of estimated baseline traffic volumes (e.g., Opening Year without Project, Horizon Year without Project) • Baseline traffic volumes (Exhibits) • Baseline plus Project traffic volumes (Exhibits)	☐	☐

Page # or Appendix: *(completed by preparer)*	Required Content	Satisfactory? *(completed by City)* YES	NO
LMA pg13-35	**Capacity analysis, including:** • Baseline Level of Service (LOS) (Table, Appendix) • Baseline plus Project LOS (Table, Appendix) • Substantial traffic effects per TSG Chapter 4 • Necessary improvements per TSG Chapter 4 • Residual Effects with Improvements Implemented	☐	☐