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**SUBJECT:** *PTS 624751- Towne Centre View Transportation Impact Analysis*

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The purpose of this Transportation Impact Analysis (TIA) is to discuss the Vehicle Miles Traveled (VMT) Analysis for the proposed Project in accordance with the methodology provided in the City of San Diego Transportation Study Manual (September 29, 2020).

**Project Location:**

The Project site is located north of the current terminus of Towne Centre Drive, generally between I-5 to the west and I-805 to the east. The Project site in its entirety encompasses 33.55 acres and is currently associated with the following addresses: 9855/9865/9875/9885 Towne Centre Drive. The proposed development area is limited to four proposed reconsolidated lots in the southern portion of the Project site and a portion of the Towne Center Drive right-of-way; collectively these areas encompass approximately 26.5-acres. The approximately 7.0-acre existing northern parcel of the Project site under separate ownership is within the City's Multi-Habitat Planning Area (MHPA) and would remain undeveloped.

The eastern portion of the Project site (approximately 11.3 acres) is currently developed with three scientific research buildings with approximately 192,365 square feet (sf) of building area and a 7,370-sf covered courtyard, and associated facilities and site improvements (surface parking, landscaping, utility infrastructure, recreational amenities, etc.). The western portion of the Project site is entitled for 190,000 sf of research and development (R&D) uses (pursuant to Coastal Development Permit 117798 and Site Development Permit 2758) and was recently used as a staging area for the Mid-Coast Trolley construction. Prior to its use as a construction staging area, the western portion of the Project site was rough graded with building pad sites to support the previously approved development, and drainage infrastructure was installed. Vehicular access to the existing buildings onsite is provided from two driveways along Towne Centre Drive, and access to the western portion of the Project site is provided from a driveway at the cul-de-sac at the western terminus of Towne Centre Drive.

There is an existing contiguous sidewalk along the portion of Towne Centre Drive adjacent to the Project site. The Project site is within a Transit Priority Area (TPA).

The Project site is designated Industrial and Open Space in the University Community Plan; is designated “Park, Open Space and Recreation” and “Industrial Employment” in the General Plan; and is zoned IP-1-1 (Industrial Park) and RS-1-7 (Residential Single Unit). The Project site is entirely within a Community Plan Implementation Overlay Zone (CPIOZ) Type A (intended to limit uses and development intensity to the levels specified in the Land Use and Development Intensity Table of the Community Plan), and within the airport influence area (AIA) for Marine Corps Air Station (MCAS) Miramar (approximately 3.0 miles to the southeast), the associated Airport Land Use Compatibility (ALUC) Overlay Zone, and Parking Impact Overlay Zone (Coastal & Campus). Portions of the Project site are within the City’s MHPA; are within a Coastal Overlay Zone; and, include environmentally sensitive lands (ESLs), consisting of steep hillsides and sensitive biological resources.

**Project Description:**

The Towne Centre View Project intends to provide a cohesive, state-of-the-industry scientific research and development (R&D) campus in the City of San Diego that can accommodate approximately 1,000,000 sf of building area, while preserving existing open space in the City’s MHPA within and surrounding the Project site.

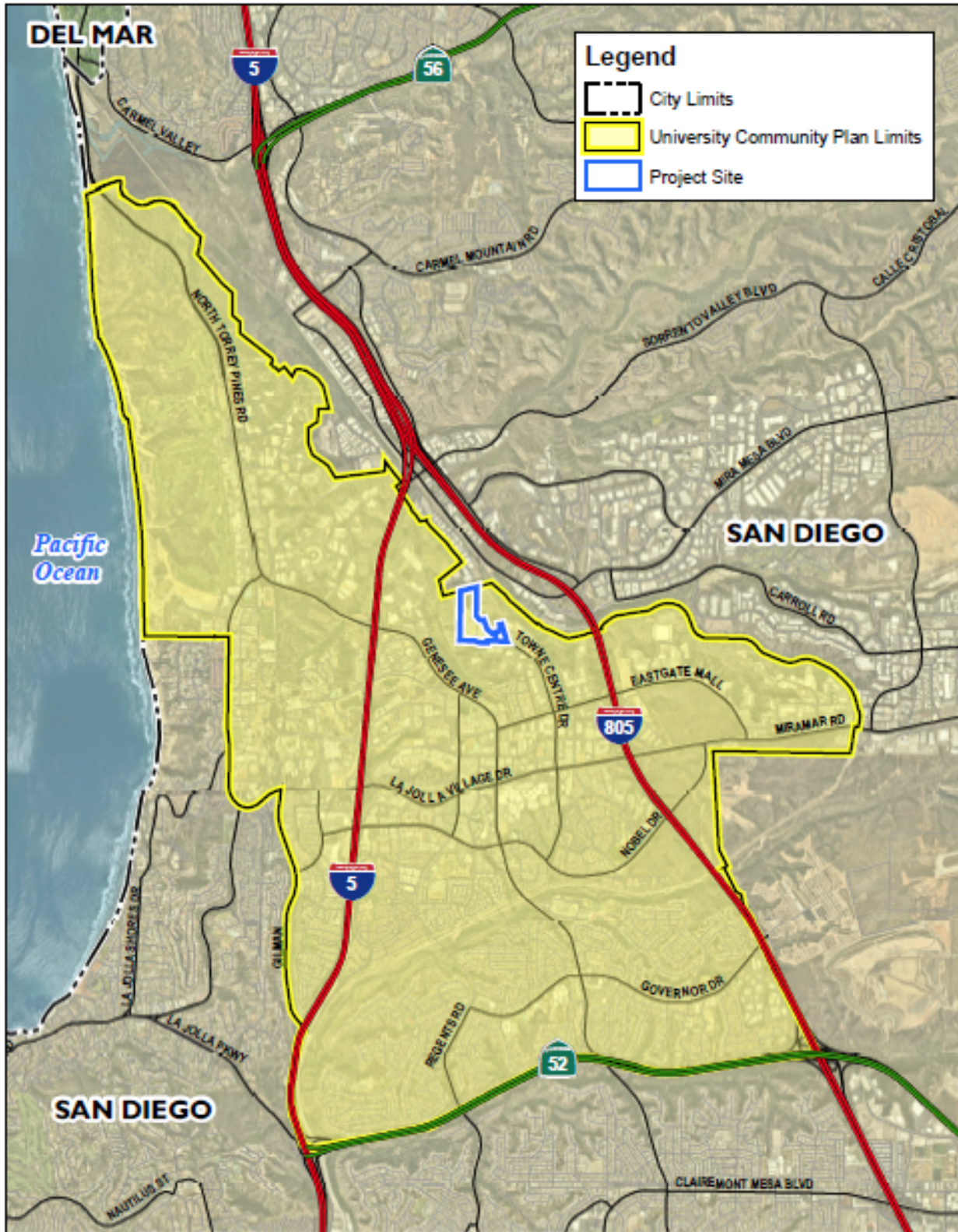
The Project would involve redevelopment of the site through the removal of the existing buildings and associated facilities to accommodate development/redevelopment of the 26.5-acre southern portion of the Project site. The northern 7.0-acre parcel under separate ownership would remain undeveloped open space in the MHPA. The proposed R&D campus would include 5 buildings (Buildings A through E), which would have an estimated gross floor area (GFA) of 999,386 sf, with additional area consisting of below-grade parking and tenant space, above-grade open parking structures, balconies and roof decks.

Discretionary actions required for Project approval include a Community Plan Amendment (CPA), Planned Development Permit (PDP), Site Development Permit (SDP), Neighborhood Development Permit (NDP), Coastal Development Permit (CDP) and a Vesting Tentative Map (VTM). A Street Vacation of Towne Centre Drive from Westerra Court to the end of Towne Centre is also being requested.

The anticipated Opening Day of the Project is estimated to be during Year 2027.

See **Figure 1** for a Project location map.

**Figure 1 – Project Location:**



**VMT Analysis:**

The City of San Diego provides guidance for the determination and evaluation of significant transportation VMT impacts resulting from a land development Project. The City of San Diego Transportation Study Manual (TSM; dated *September 29<sup>th</sup>, 2020*) presents the guidelines for the analysis of CEQA Transportation VMT requirements which include screening criteria, significance thresholds, analysis methodology, and mitigation.

### **Screening Criteria:**

As specified in the City of San Diego's TSM, the requirements to prepare a detailed transportation VMT analysis applies to all land development Projects, except for those Projects that meet at least one of the screening criteria listed below:

1. **Residential or Commercial Project Located in a VMT Efficient Area:** The Project is a residential or commercial employment Project located in a VMT efficient area (15% or more below the base year average VMT per Capita or VMT per Employee) based on the applicable location-based screening map produced by SANDAG.
2. **Industrial or Agricultural Project Located in a VMT Efficient Area:** The Project is an industrial employment or agricultural employment Project located in VMT efficient area (in an area with average or below-average base year Employee VMT per employee) based on the applicable location-based screening map produced by SANDAG.
3. **Small Project:** The Project is a small Project defined as generating less than 300 daily unadjusted driveway trips using the City of San Diego trip generation rates/procedures.
4. **Locally Serving Retail/Recreational Project:** The Project is a locally serving retail/recreational Project defined as having 100,000 square feet gross floor area or less and demonstrates through a market area study that the market capture area for the Project is approximately three miles (or less) and serves a population of roughly 25,000 people or less. Locally serving retail is consistent with the definitions of Neighborhood Shopping Center in the San Diego Municipal Code Land Development Code Trip Generation Manual. Locally serving recreation land uses are listed in Appendix B of the TSM, if they meet the square footage and market capture area above. Adding retail/recreation square footage (even if it is 100,000 square feet gross floor area or less) to an existing regional retail shopping area is not screened out.
5. **Locally Serving Public Facility:** The Project is locally serving public facility defined as a public facility that serves the surrounding community or a public facility that is passive use. The following are considered locally serving public facilities: transit centers, public schools, libraries, post offices, park-and-ride lots, police and fire facilities, and government offices. Passive public uses include communication and utility buildings, water sanitation, and waste management.
6. **Affordable Housing:** The Project has access to transit (located within a reasonable walking distance of ½ mile from the Project site) and is wholly or has a portion that meets one of the following criteria: is affordable to persons with a household income equal to or less than 50% of the area median income (as defined by California Health and Safety Code Section 50093), housing for senior citizens [as defined in Section 143.0720(e)], housing for transitional foster youth, disabled veterans, or homeless persons [as identified in 143.0720(f)]. The units shall remain deed-restricted for a period of at least 55 years. The Project shall provide no more than the minimum amount of parking per unit, per San Diego Municipal Code Section 143.0744. Only the portion of the Project that meets the above criteria is screened out. For example, if the Project is 100 units with 10 deed-restricted affordable housing units, transportation VMT analysis would not be necessary for the 10

affordable units but would be necessary for the remaining 90 units (unless they meet one of the other screening criteria). For purposes of applying the small Project screening criteria, the applicant would only include the trip generation for the non-affordable housing portion of the Project (since the affordable housing portion is screened out).

7. Mixed-Use Project Screening Considerations: The Project's individual land uses should be compared to the screening criteria above. It is possible for some of the mixed-use Project's land uses to be screened out and some to require further analysis. For purposes of applying the small Project screening criteria, the applicant would only include the trip generation for portions of the Project that are not screened out based on other screening criteria. For example, if a Project includes residential and retail, and the retail component was screened out because it is locally serving; only the trip generation of the residential portion would be used to determine if the Project meets the definition of a small Project.

8. Redevelopment Project Screening Considerations: The Project is a redevelopment Project that demonstrates that the proposed Project's total Project VMT is less than the existing land use's total VMT. Exception: If a Project replaces affordable housing (either deed-restricted or other types of affordable housing) with a smaller number of moderate- income or high-income residential units, the Project is not screened out and must analyze VMT impacts per Table 3 of the TSM.

The Project does not meet any of the above screening criteria and therefore a detailed VMT analysis is required.

### **Screening Assessment:**

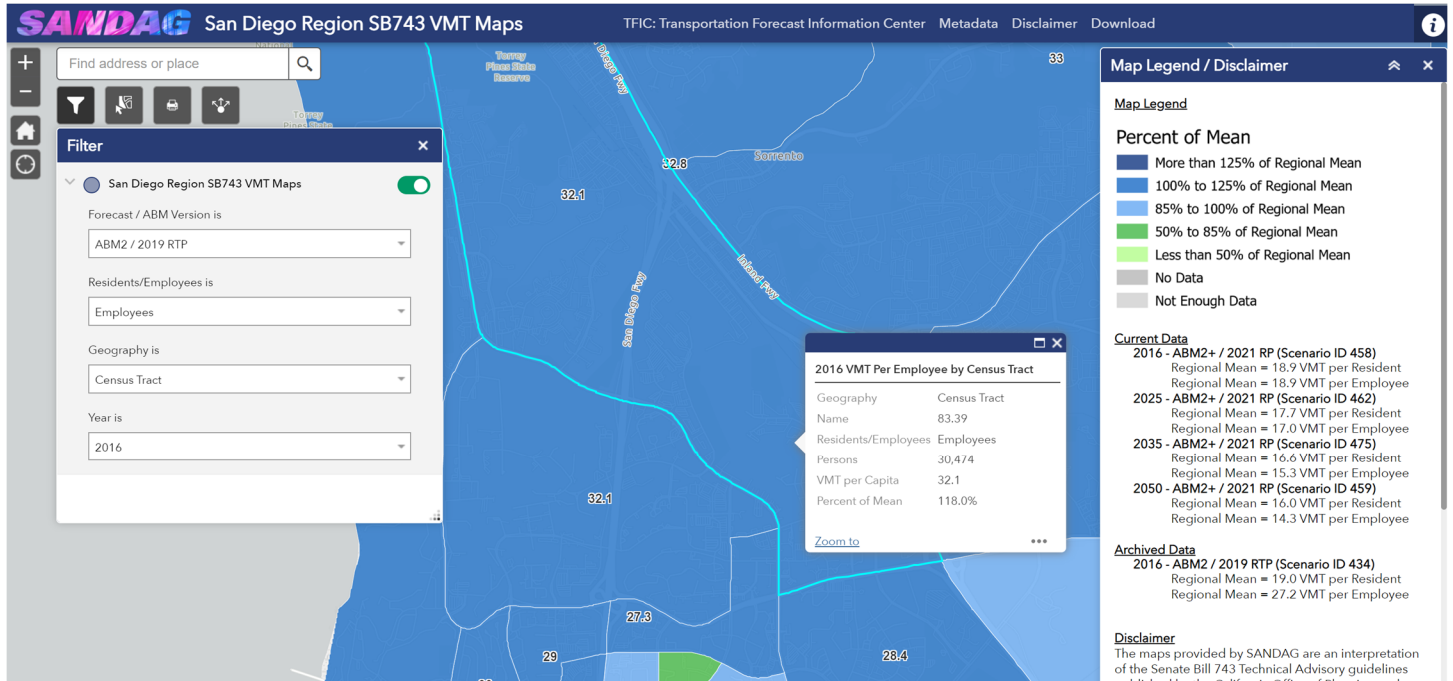
The screening assessment below evaluates the Project with applicable Screening Criteria.

Residential or Commercial Project Located in a VMT Efficient Area: The project is a residential or commercial employment project located in a VMT efficient area (15% or more below the base year average resident VMT per Capita or employee VMT per Employee) based on the applicable location-based screening map produced by SANDAG.

- Appendix B of the City of San Diego TSM provides a land-use type categorization for specific land-use designations. The proposed project's land use as a scientific research and development use is categorized as a Commercial Employment land-use type.
- The project, as a Commercial Employment land use, has been evaluated using the SANDAG current base year screening map (Series 14, Year 2016) included in **Figure 2**. As shown in the screening map, the regional mean Employee VMT per employee is 27.2 miles per employee. The project is located in Census Tract 83.39 in which the Employee VMT per employee is 32.1; which is 118.0% of the regional average.

**Therefore, the Project is not located within a VMT efficient area and would not be screened out of having to perform a VMT analysis.**

**Figure 2: SANDAG VMT Base Screening Map (Series 14 Year 2016)<sup>1</sup>**



<sup>1</sup> <https://sandag.maps.arcgis.com/apps/webappviewer/index.html?id=bb8f938b625c40cea14c825835519a2b>

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**Significance Determination:**

Since the Project did not meet any of the screening criteria, it must evaluate the VMT produced by the project.

Because the Project is calculated to generate more than 2,400 daily unadjusted driveway trips, the Project is required to input the project into the SANDAG Regional Travel Demand Model to provide the Project's employee VMT per employee. At the time of this analysis, the Series 14 ABM2 (2019 RTP) model was the latest available model and did not allow for project-specific land-use overrides, such as an increase in allowed intensity. Although the proposed project is consistent with existing zoning reflected in the SANDAG Series 14 AMB2 model, a Project-specific VMT report was obtained from SANDAG for a Series 13 ABM1 Year 2025 SANDAG model run with project land uses overrides for Traffic Analysis Zone (TAZ) that the Project site is within and nearest forecast year to the time the Project is expected to open (2027).

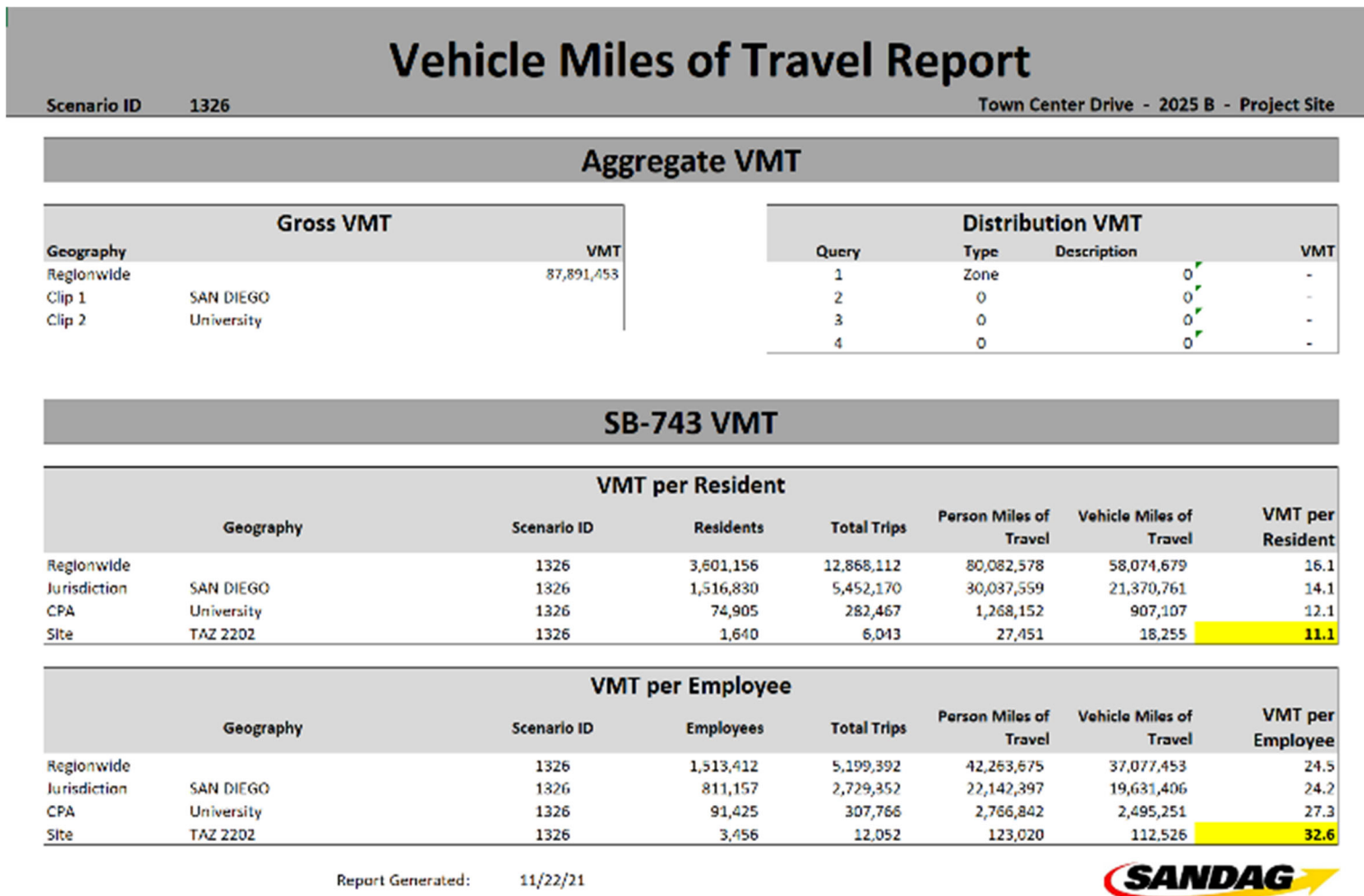
As shown in Figure 3, the proposed Project is expected to generate 32.6 VMT per Employee based on the Series 13, Year 2025 model with customized land-use inputs (full land-use intensity) obtained from SANDAG. According to SANDAG Series 13 Base Year 2012 VMT Screening Map, the Regional Mean is 25.9 VMT per Employee for the San Diego Region. As a result, the proposed Project would generate VMT at 125.87% of the regional mean.

The significance thresholds and specific VMT metrics used for different types of land uses are shown in Table 3 of the City of San Diego TSM. Table 3 of the TSM establishes that a significant impact will occur for commercial employment projects with a VMT per employee that is in excess of 15% below the regional mean VMT per employee (22.015 VMT per Employee).

Therefore, the Project would be required to reduce VMT per employee by 32.47% to reduce Project VMT to below a level of significance (i.e. 32.6 VMT per employee multiplied by 32.47% = 10.59 VMT per Employee reduction resulting in 22.01 VMT per employee being generated).

Therefore, before mitigation, the proposed Project would have a significant transportation VMT impact. As discussed further below, with mitigation, the Project's impact would be less than significant.

Figure 3: SANDAG VMT MODEL OUTPUT (Series 13 Year 2025) WITH PROJECT



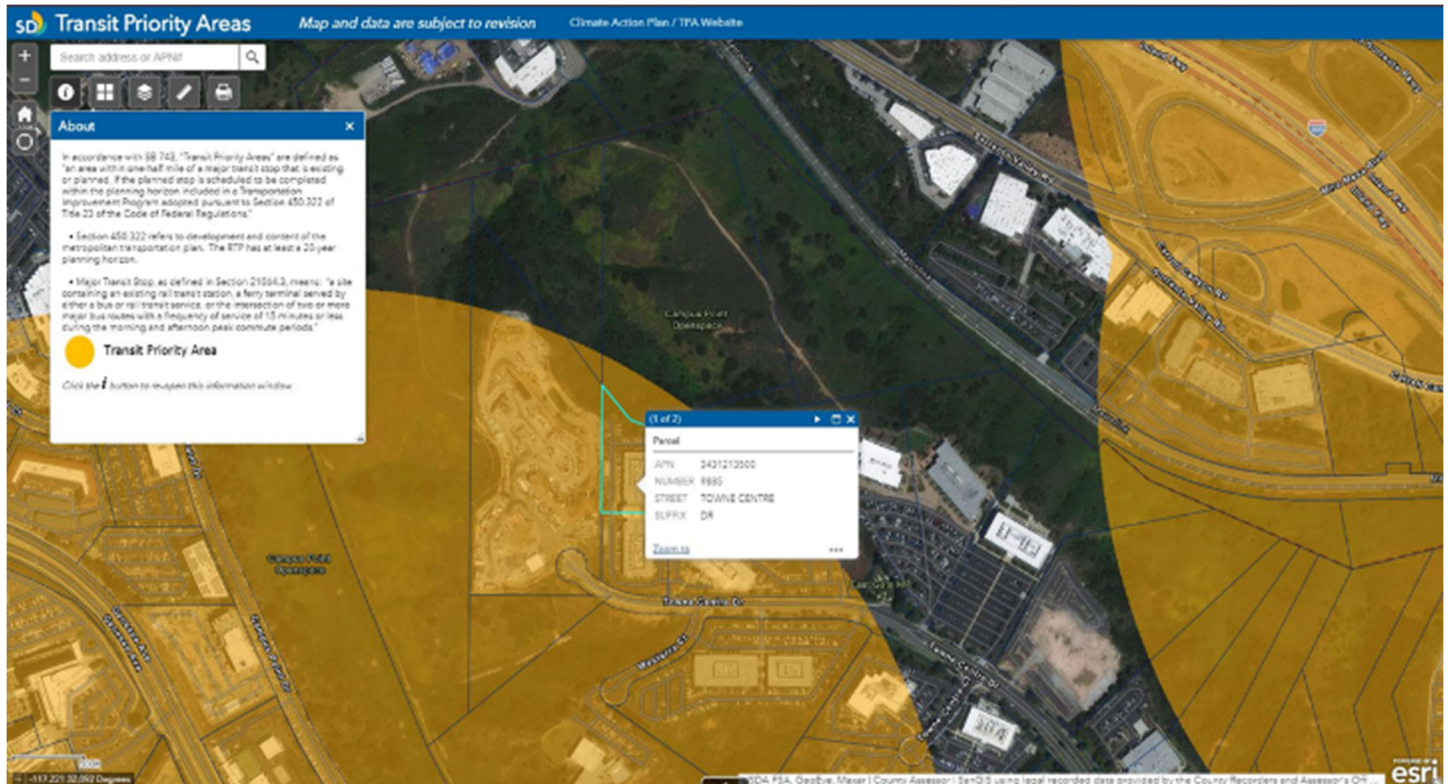
**Complete Communities: Mobility Choices– Compliance:**

The Project is required to comply with the Complete Communities: Mobility Choices ordinance (effective January 8, 2021 outside the Coastal Zone)

As shown in **Figure 3**, the Project site is entirely located within a Transit Priority Area (TPA).



Figure 3: Transit Priority Area Map



The SDMC Ordinance Number O-21274 (12/9/2020) provides the development regulations for the Mobility Choices portion of the Complete Communities program. As defined in SDMC Section 143.1103, a site where any of the premises is located either partially or entirely in a Transit Priority Area is defined to be in Mobility Zone 2. Since the Project is located within a TPA as shown above, the Project is within Mobility Zone 2.

SDMC Section 143.1103(b) requires the application of 5 points of VMT reduction measures for all development (outside the Coastal Overlay Zone) located within a Mobility Zone 2. The Land Development Manual at Appendix T provides a list of VMT reduction measures that are split into categories, which include pedestrian, bicycle supportive, and transit supportive measures. Each measure is assigned a point value per unit of measure.

For development in Mobility Zone 2, SDMC Section 143.1103(b)(1) identifies the requirement to provide VMT reduction measures totaling at least 5 points. Alternatively, SDMC Section 143.1103(b)(5) provides the option for the applicant to pay the Active Transportation In Lieu Fee referenced in SDMC Section 143.1103(c).

As shown in Table 1 below, the Project will implement 11.5 points of VMT reduction measures, based on Complete Communities: Mobility Choices, which exceeds the minimum 5 point requirement in Mobility Zone 2.

**Table 1 – Complete Communities: Mobility Choices VMT Reduction Measures:**

<b>Description of Mobility Choices Measure</b>	<b>Points Credited towards Compliance</b>
(S) Provide short-term bicycle parking spaces that are available, at least 10% beyond minimum requirements	1.5
(S) Provide an on-site bicycle repair station	1.5
(S) Provide on-site showers/lockers at least 10% beyond the minimum requirement	2
(S) Install pedestrian resting area/recreation node on-site, adjacent to the public pedestrian walkway (with signage designating the space is available), to be maintained by the property owner	2.5
(S) Install pedestrian-scale lighting adjacent to public pedestrian walkways along the entire development frontage.	0.5
(S) Provide on-site car-share vehicle spaces with designated parking shown on a site plan	2
(S) Provide an on-site parking area designated for micro-mobility travel (e.g. bicycles, e-bikes, electric scooters, shared bicycles, and electric pedal-assisted bicycles)	1.5
<b>Total Points for Mobility Choices Compliance</b>	<b>11.5 points</b>

**Mitigation:**

According to the Transportation Study Manual (TSM) page 29, “There are several resources for determining the reduction in VMT due to TDM measures such as the CAPCOA Quantification Report and the SANDAG Mobility Management Guidebook/VMT Reduction Calculator Tool (see Mitigation Section below). The applicant should coordinate with the Development Services Department’s Transportation Development Section staff to determine the appropriate method for calculating TDM measure effectiveness”.

Through consultation with City Development Services Department Transportation Development staff, it was determined that the CAPCOA, “Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity” (CAPCOA 2021) published in December 2021 could be proposed to quantify the effectiveness of proposed mitigation for the Project. The CAPCOA 2021 guide is an update to an older 2010 reference which is specifically mentioned in the TSM and which forms the basis for Appendix E. As CAPCOA 2021 is based on the most recent research and guidance from the State of California on VMT reduction, it has been determined as the appropriate primary reference in-lieu of older guidance from 2010 which has been superseded.

CAPCOA 2021 includes multiple mitigation measures which can be implemented at a Plan/Community or Project/Site scale in order to reduce VMT.

Mitigation measures T-6 and T-12 have been determined to be appropriate for application to the Project. According to CAPCOA 2021, mitigation measures T-6 and T-12 may be used at a Project/Site scale in a suburban area such as the proposed Project and do not conflict with other mitigation measures. These measures are discussed further below.

Measures T-6 and T-12 quantify a reduction to Commute VMT where the SANDAG Series 13 ABM1 model run for the Project provides a Total Project VMT output. Therefore, a conversion ratio to apply the commute VMT reduction to the total project VMT metric is required. The conversion ratio for Commute VMT to Total Project VMT was provided by City of San Diego Development Services Department, Transportation Development staff as follows:

Sr 14 ABM2 2016 Employee VMT/Employee: 32.1

Sr 14 ABM2+ 2016 Commute VMT/Employee: 25.1

**Ratio = 25.1 commute VMT/32.1 total VMT = 78%**

**Therefore, a 78% reduction ratio was applied to the quantified effectiveness of each mitigation measure, to ensure correct application to the SANDAG model VMT metric.**

**Mitigation Measure T-12 - Price Workplace Parking:**

As discussed in CAPCOA 2021, Mitigation Measure T-12 has a potential effectiveness of a 20% reduction in Employee Commute VMT. The variables impacting the reduction as well as the formula for calculating the effectiveness are shown below.

## T-12. Price Workplace Parking



### GHG Mitigation Potential



Up to 20.0% of GHG emissions from project/site employee commute VMT

### Co-Benefits (icon key on pg. 34)



### Climate Resilience

Priced workplace parking could incentivize increased use of public transit and thus result in less traffic, potentially reducing congestion or delays on major roads during peak AM and PM traffic periods. When this reduction occurs during extreme weather events, it better allows emergency responders to access a hazard site.

### Measure Description

This measure will price onsite parking at workplaces. Because free employee parking is a common benefit, charging employees to park onsite increases the cost of choosing to drive to work. This is expected to reduce single-occupancy vehicle commute trips, resulting in decreased VMT, thereby reducing associated GHG emissions.

### Subsector

Trip Reduction Programs

### Locational Context

Urban, suburban

### Scale of Application

Project/Site

### Implementation Requirements

Implementation may include the following.

- Explicitly charging for employee parking.
- Implementing above-market rate pricing.
- Validating parking only for invited guests (or not providing parking validation at all).
- Not providing employee parking and transportation allowances.

In addition, this measure should include marketing and education regarding available alternatives to driving.

### Cost Considerations

## GHG Reduction Formula

For calculating effectiveness of pricing residential parking, see Measure T-16, *Unbundle Residential Parking Costs from Property Cost*. For calculating effectiveness of pricing parking at visitor-intensive land uses, see Measure T-24, *Implement Market Price Public Parking (On-Street)*.

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

## GHG Calculation Variables

ID	Variable	Value	Unit	Source
<b>Output</b>				
A	Percent reduction in GHG emissions from employee commute VMT	0–20.0	%	calculated
<b>User Inputs</b>				
B	Proposed parking price	[ ]	\$	user input
C	Baseline parking price	[ ]	\$	user input
D	Share of employees paying for parking	[ ]	%	user input
<b>Constants, Assumptions, and Available Defaults</b>				
E	Elasticity of parking demand with respect to parking price	-0.4	unitless	Lehner & Peer 2019
F	Ratio of vehicle trip reduction to VMT	1	unitless	assumption

Further explanation of key variables:

- (B) – Parking price can be provided on an hourly, daily, or monthly basis. Monthly pricing is less effective than requiring daily or hourly payment since the price signal is diluted to only once a month.
- (C) – If baseline parking price is \$0 (that is, if parking is typically free), set C = ¼ B, allowing for the maximum 50 percent increase in price. Alternatively, for locations that are located within 0.5 mile of transit service, set C = average transit fare to/from the location.
- (D) – Many organizations allow some employees free parking benefits. VMT reductions should be adjusted based on the share of employees that would be paying for parking.
- (E) – A meta-analysis of parking price studies found that a 0.40 percent decrease in parking demand occurs for every 1 percent increase in parking price (Lehner & Peer 2019). Price elasticity of parking demand varies by location, day of the week, and time of day.
- (F) – The adjustment factor from vehicle trips to VMT is 1. This assumes that all vehicle trips will average out to typical trip length (“assumes all trip lengths are equal”). Thus, it can be assumed that a percentage reduction in vehicle trips will equal the same percentage reduction in VMT. Subsidies or discounts targeting commute trips may have a higher factor as they are generally longer than the trip lengths for other purposes.

The proposed Project intends to charge 100% of employees for parking. The CAPCOA formula uses this variable as well as the cost of a transit pass to calculate effectiveness as shown above. An adult one day pass for MTS in the City of San Diego is \$6 and monthly pass is \$72. Using the one-day pass, the formula would be driven as follows:

$$A = (\$9 - \$6) / \$6 \times -0.4 \times 1 \times 1 = -20\% * 78\% \text{ conversion to Project VMT} = 15.6\% \text{ reduction in Project VMT}$$

This would result in a daily cost of parking of \$9 for each employee to score the maximum effectiveness. The minimum parking rate per day would be \$6 for no reduction in VMT. Therefore, the proposed Project will charge \$9 per day for parking with an estimated VMT reduction of 15.6%.

In order to support this level of effectiveness, consistent with the best practices identified in the 2021 CAPCOA Handbook to ensure other transportation options, the project will provide the following supportive measures:

- Pedestrian improvements are called out in CAPCOA 2021 as measure T-18 with the notation that, “Providing sidewalks and an enhanced pedestrian network encourages people to walk instead of drive. This mode shift results in a reduction in VMT and GHG emissions.” The proposed Project will include sidewalks along the periphery of the Project along Towne Centre Drive to connect with the existing pedestrian sidewalks which lead down Towne Centre Drive. A series of pathways will lead from the sidewalks throughout the Project to connect to office buildings and amenity facilities such as the gym, restaurants, and services, as well as the passenger loading areas for the shuttle and micromobility staging areas and will be enhanced with rest areas, eating, and meeting places, as well as recreational areas with basketball and sport courts, and other amenities. The proposed Project will include significant native landscape to enhance the pedestrian experience on the exterior as well as the interior of the Project and include pedestrian scale lighting along the pathways and adjacent to the right of way.

The SANDAG Mobility Guidebook at page 31 also notes that, “expanding or improving pedestrian facilities improves pedestrian safety, walkability, and accessibility to goods and services. Improvements to the pedestrian environment, such as adding street trees and lighting, can enhance comfort and security for pedestrians and thereby encourage walking.”<sup>2</sup>

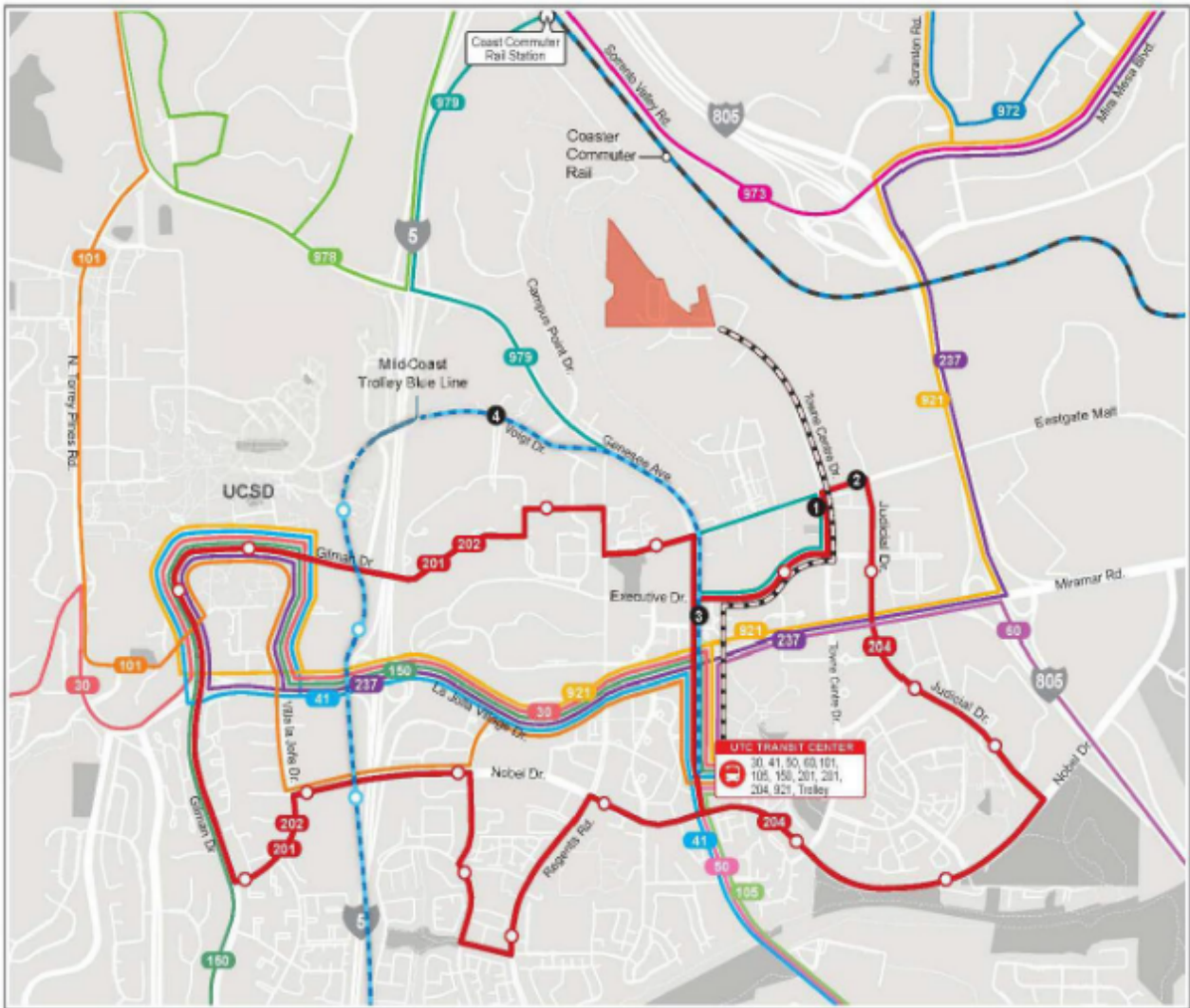
- To ensure connectivity to transit (variable C in formula above), a private shuttle will be provided for employees at the Project site connecting with transit in the surrounding area including the University Town Center Transit Center. The shuttle will operate at 15-minute headways during the morning 7:30AM to 9:30 AM peak period and evening peak period of the 4:30PM to 6:30PM and operate at 30-minute or better headways throughout the day. Figure 4 shows the shuttle connection to the robust transit network in the University area.

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<sup>2</sup> The SANDAG guidebook provides references to Frank, L., Greenwald, M., Kavage, S. and Devlin, A. (2011). An Assessment of Urban Form and Pedestrian and Transit Improvements as an Integrated GHG Reduction Strategy; and Washington State DOT. [sdot.wa.gov/research/reports/fullreports/765.1.pdf](http://sdot.wa.gov/research/reports/fullreports/765.1.pdf) Handy, Susan, et al, “Impacts of Pedestrian Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions: Policy Brief [arb.ca.gov/cc/sb375/policies/ped/walking\\_brief.pdf](http://arb.ca.gov/cc/sb375/policies/ped/walking_brief.pdf) as evidence of the supportive nature of pedestrian enhancements to VMT reduction.





Figure 4 – Project Shuttle and Area Transit Network














### North University City Transit Infrastructure



**Legend**

-  = Project Location
-  = Project Shuttle

ID / Route	Walking Distance From Project Site
1  979	0.64 Mile
2  204	0.69 Mile
3  41	1.10 Miles Mid-Coast Trolley Executive Dr.
4  979	1.61 Miles Mid-Coast Trolley Voigt Station

MTS Bus Routes	
 30	 101
 41	 105
 50	 150
 60	 237
 921	 979
 972	 201 Super Loop
 973	 202 Rapid
 973	 204

- Provide an on-site parking area designated for micro-mobility travel (e.g. bicycles, e-bikes, electric scooters, shared bicycles, and electric pedal-assisted bicycles). The Project will include at least 1-dozen e-bike/share bicycles and 1-dozen scooters coordinated with a major micro-mobility company such as Lyft, Bird Scooter, CitiBike, or similar companies. (Due to the fluidity and expanding nature of the micromobility space it is impossible to know the exact companies or types of micromobility vehicles that may be available at first occupancy). The Project will also include the ability to check out bicycles from the bike locker area for use in the Project vicinity. The specific number of bicycles and scooters are likely to grow based on demand for these services, and will be coordinated through the on-site TDM concierge.

SANDAG Mobility Guidebook at page 34 notes that bikeshare micromobility programs, “provide an affordable way to use bicycles for short-distance trips as an alternative to driving or as a means of connecting to transit. Different bikeshare models include station-based bikeshare, employee bikeshare, dockless bikeshare, and peer-to-peer bikeshare. Recently, mobility service providers have introduced fleets of dockless scooters that may complement existing bikeshare programs.”

- Passenger Loading Zones.

Passenger loading zones provide a drop-off and loading area for ride-share vehicles, and provide convenient and easy access for those using these vehicles to access the Project. The Project includes a large plaza drop-off area at the entryway in the middle of several buildings. This area will be the focal point of the Project and include the loading and unloading areas for car services such as Lyft and Uber as well as the Project shuttle. The area will also include access to micromobility vehicles, and be flanked by amenities. The plaza is located in the hub of the Project and pathways provide immediate accessibility to campus buildings.

- Transit Encouragement Programs

TSM Appendix E notes that Commute Trip Reduction Marketing is effective in supporting the use of transit, “through use of kiosks, flyers, posters, and emails. New employees/tenants are provided information on their travel options and program incentives.” Providing information creates commute optionality for employees and puts them on notice of transit in the area.

- Access to services that reduce the need to drive, such as cafes, commercial stores, banks, post offices, restaurants, gyms, either onsite or within 1,320 feet (1/4-mile) of the structure/use. (To satisfy CAP Checklist requirement)

On-site restaurants, gyms, eating areas, and other ancillary amenities reduce the number of day-time trips from the Project site made during work hours and thus reduce overall VMT. The Project has been designed with gym facilities, basketball courts and recreational fields to provide before, during and after work recreational opportunities for campus workers. Restaurants are planned to provide quick as well as leisurely dining choices to avoid mid-day trips. However, the Project shuttle will provide access to the UTC mall and other areas in the vicinity to broaden the choices for lunch and shopping, and provide access to financial institutions and others without the need to get into a car.



Best practices for mitigation measure T-12 in CAPCOA 2021 notes that there is a potential reduction in effectiveness where free, on-street parking in the vicinity of the Project is readily accessible. An analysis of the available, on street parking in the Project area determined that the on-street parking of 140 available parking spaces<sup>3</sup> is relatively low compared to the amount of parking needed in the Project (approximately 2500 spaces). In addition, street parking is first-come, first-served and available to other facilities in the area, thus reducing the potential usage by employees of the Project.

**T-6: Implement Commute Trip Reduction Program (Mandatory Implementation and Reporting):**

As discussed in CAPCOA 2021, this measure has a maximum effectiveness of 26%. The variables impacting this measure as well as the formula for calculating effectiveness are shown below:

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<sup>3</sup> Based on approximately 4,000 feet of street frontage with 29 feet per vehicle allowed.

## T-6. Implement Commute Trip Reduction Program (Mandatory Implementation and Monitoring)

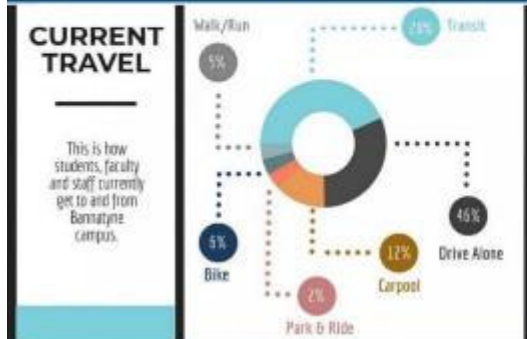


Photo Credit: University of Manitoba, 2018

### GHG Mitigation Potential



Up to 26.0% of GHG emissions from project/site employee commute VMT

### Co-Benefits (icon key on pg. 34)



### Measure Description

This measure will implement a mandatory CTR program with employers. CTR programs discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking, thereby reducing VMT and GHG emissions.

### Subsector

Trip Reduction Programs

### Locational Context

Urban, suburban

### Scale of Application

Project/Site

### Implementation Requirements

The mandatory CTR program must include all other elements (i.e., Measures T-7 through T-11) described for the voluntary program (Measure T-5) plus include mandatory trip reduction requirements (including penalties for non-compliance) and regular monitoring and reporting to ensure the calculated VMT reduction matches the observed VMT reduction.

## GHG Reduction Formula

$$A = B \times C \times D$$

## GHG Calculation Variables

ID	Variable	Value	Unit	Source
<b>Output</b>				
A	Percent reduction in GHG emissions from project/site employee commute VMT	0-26.0	%	calculated
<b>User Inputs</b>				
B	Percent of employees eligible for program	0-100	%	user input
<b>Constants, Assumptions, and Available Defaults</b>				
C	Percent reduction in vehicle mode share of employee commute trips	-26	%	Nelson\Nygaard Consulting Associates 2015
D	Adjustment from vehicle mode share to commute VMT	1	unitless	assumed

Further explanation of key variables:

- (B) – This refers to the percent of employees that would be able to participate in the program. This will usually be 100 percent. Employees who might not be able to participate could include those who work nighttime hours when transit and rideshare services are not available or employees who are required to drive to work as part of their job duties. This input does not refer to the percent of employees who participate in the program.
- (C) – A multiyear study of mode share on Genentech’s South San Francisco campuses tracked the long-run change in employee commute mode share with implementation of mandatory CTR. Between 2006 and 2014, employee vehicle mode share (includes single-occupied vehicles and carpools) decreased from approximately 90 percent to 64 percent, which is a 26 percent reduction (Nelson\Nygaard Consulting Associates 2015).
- (D) – The adjustment factor from vehicle mode share to commute VMT is 1. This assumes that all vehicle trips will average out to typical trip length. Thus, it can be assumed that a percentage reduction in vehicle trips will equal the same percentage reduction in VMT.



### VMT Reductions

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

As discussed above, the following component mitigation measures that make up mitigation measure T-6 in the CAPCOA 2021 handbook will be fully implemented with 100% employee eligibility in order to qualify for maximum effectiveness under the Commute Trip Reduction Program.

- T-7. Implement Commute Trip Reduction Marketing - The Project will designate a TDM coordinator who will ensure that Commute Trip Reduction materials and policies are implemented and tracked at the Project site. This includes providing information about the benefits of transit, providing SANDAG iCommute information, ensuring flexible work hour policies are promoted, hosting a bike-to-work day

promotional event, transit promotion events and ensuring facilities committed to this program remain available.

- T-8. Provide Ridesharing Program- The Project will include tenant participation in the SANDAG iCommute program and encourage ridesharing services as recommended by the program. In addition, the Project will incorporate carpool priority parking to ensure high visibility and convenience for carpool and vanpool users.
- T-9. Implement Subsidized or Discounted Transit Program - The proposed Project will initially subsidize transit passes for employees at 50%. The amount of the subsidy can vary over time to reach the maximum Projected effectiveness within this measure and will be monitored as part of the mandatory monitoring and reporting program. (To satisfy CAP Checklist requirement)
- T-10. Provide End-of-Trip Bicycle Facilities - A bicycle repair station, lockers, bicycle storage and showers will be provided for employees.
- T-11. Provide Employer-Sponsored Vanpool- Project tenants will be required by lease provision to participate in SANDAG's iCommute program including providing an employer-sponsored vanpool to promote shared vehicle usage.

Using the formula provided, the calculated effectiveness for the Project site would be  $A=100\% \times .26 \times 1 = 26\% \times 78\%$  conversion to Project VMT= 20.28% reduction in Project VMT.

A mandatory monitoring and reporting program will be implemented to ensure the calculated effectiveness is achieved. This program will be further defined in future submittals in coordination with the City's Development Services Department Transportation Development staff. Monitoring will be designed to ensure effectiveness of the Project's VMT reductions. Penalties for failing to meet VMT reduction targets will be assessed to the applicant, who will be responsible increasing effectiveness of VMT reduction measures (either increasing spending on current VMT reduction measures or implementing new measures).

**Total Calculated Mitigation Measure Effectiveness:**

CAPCOA 2021, applies the following formula to determine total calculated effectiveness for measures within the same subsector, such as T-6 and T-12.

$$\text{Reduction}_{\text{subsector}} = 1 - [(1 - A) \times (1 - B) \times (1 - C)]$$

Utilizing the formula above, the calculated effectiveness for the combined measures is 32.72% which exceeds the reduction target necessary for full mitigation of the Project’s significant transportation impacts. The combined effectiveness of measures T-6 and T-12 is also below the 45% subcategory maximum contained in CAPCOA 2021 as shown below:

Scale	Subsector	Quantified Measures <sup>a</sup>	Subsector Maximum <sup>b, c, d, e, f</sup>
P/S	Land Use	4	65%
	Neighborhood Design	—	—
	Trip Reduction Programs	9	45% commute VMT
	Parking or Road Pricing/ Management	3	35%
	Transit	—	—
P/C	Land Use	1	30%
	Neighborhood Design	9	10%
	Trip Reduction Programs	1	2.3% commute VMT
	Parking or Road Pricing/ Management	1	30%
	Transit	5	15%

P/S = project/site; P/C = plan/community; VMT = vehicle miles traveled.

<sup>a</sup> Excludes Measure T-30, Use Cleaner-Fuel Vehicles, within the Clean Vehicles and Fuels subsector and all supporting or non-quantified measures from other subsectors.

<sup>b</sup> — = no measure within the subsector at the specified scale.

<sup>c</sup> Where a subsector consists of only one measure, the subsector maximum listed is the individual measure maximum.

<sup>d</sup> Most maximums were conservatively rounded down to the nearest multiple of five or whole number.

In addition, the proposed mitigation is below the 70% global maximum reduction shown in the formula below:

$$\text{Reduction}_{\text{multi-subsector}} = 1 - [(1 - \text{Land}) \times (1 - \text{Design}) \times (1 - \text{Parking}) \times (1 - \text{Transit})] \leq 70\%$$

**Conclusion:**

As a result, with mitigation, the Project will have a less than significant Transportation VMT impact.

The calculation of the application of mitigation measures are demonstrated in tabular form below for summary purposes.

	VMT per Employee	Percentage of Regional Mean
Series 13, 2025 Model (Project Specific)	32.6	125.87%
SANDAG Series 13 Base Year 2021 Regional Mean	25.9	100%
Significance Threshold (15% below Regional Mean)	22.015	85%
Project Specific After Mitigation	21.933	84.68%