Appendix C4

Fehr & Peers TDM Effectiveness Memorandum [Revised]

FEHR PEERS

Memorandum

Date: April 6, 2021

To: Hillary Gitelman and Karl Heisler, ESA

From: Franziska Church and Teresa Whinery, Fehr & Peers

Subject: Downtown West Mixed-Use Plan – Transportation Demand Management (TDM) Plan Assessment

SJ19-1951

As part of Environmental Impact Report (EIR) mitigation measure AQ-2h, the Downtown West Mixed-Use project ("Project") is required to develop a robust transportation demand management (TDM) program that maximizes reductions for vehicle trips and vehicle miles of travel (VMT). This memorandum assesses the maximum VMT reduction a robust TDM program could achieve by evaluating all reasonably available and quantifiable TDM measures, regardless of what measures are proposed by the Project.

Fehr & Peers prepared maximum TDM reduction estimates using the California Air Pollution Control Officers Association (CAPCOA), August 2010 report *Quantifying Greenhouse Gas Mitigation Measures* ("CAPCOA report"). Based on the project description included in the Draft EIR and our evaluation of all reasonably available and quantifiable TDM measures, a robust TDM program would be expected to achieve up to a 27 percent reduction in vehicle trips and total VMT from the City of San Jose travel demand model outputs.

The Project's proposed TDM mitigation measure includes most of the TDM measures identified by CAPCOA, including the most effective TDM measures (i.e. those that have the greatest trip/VMT reductions) as required measures. The Project includes an additional list of supplemental TDM measures that the Project applicant can tailor to meet the Project's VMT reduction requirements. Based on the required and supplemental measures, it is reasonable to anticipate that the Project will be able to achieve the maximum feasible trip and VMT reduction of 27 percent. Additionally, as part of the EIR's TDM mitigation measure, the Project will be required to attain this maximum achievable TDM reduction through annual monitoring and enforcement as specified in the EIR.

Transportation Demand Management

For large area plans, vehicle trip and VMT reduction will typically focus on physical design elements related to the ultimate built environment, such as the density and mix of land uses as well as the availability and quality of the transportation network related to transit, walking, and bicycling. However, for most individual development projects, the primary method of reducing vehicle trips and VMT is to implement a TDM program focused on building-level or employer-level actions.

The available research indicates that the effectiveness of TDM measures varies substantially depending on the context in which they are applied. TDM is most effective in urban areas where urban character (land use and built environment) and land use mix are most supportive of vehicle trip reduction. TDM programs are less effective in rural and suburban areas where the built environment and transportation network are more dispersed and where modes are typically limited to personal vehicles.

The current industry standard for calculating vehicle trip and VMT reduction efficacy from TDM strategies is *Mitigating Greenhouse Gas Emissions*, a report developed by CAPCOA, which evaluates the literature behind a number of TDM program elements and provides methods for calculating a vehicle trip and VMT reduction associated with each. There are several limitations in the available vehicle trip and VMT reduction data for urban application that are worth noting here:

- **Effectiveness of vehicle trip and VMT reduction may diminish with each additional TDM strategy implemented.** Each of the CAPCOA TDM strategies can be combined with others to increase the effectiveness of vehicle trip and VMT mitigation; however, the interaction between the various strategies is complex. Generally, with each additional measure implemented, a vehicle trip and VMT reduction is achieved, but the incremental benefit of vehicle trip and VMT reduction may be less than the benefit that measure would have if it was considered on its own.[1]
- **Some level of TDM effectiveness is likely included in model-based trip generation.** For projects such as the Downtown West Mixed-Use Project, location-specific travel demand forecasting models are used to estimate vehicle trips, rather than standard rates provided in the ITE *Trip Generation* manual. These models partially account (directly and indirectly) for measures such as parking pricing, limited parking supply, bicycle and pedestrian facilities, as well as transit accessibility.

[1] For example, a theoretical TDM Measure A and B may have an effectiveness of 10 percent each when they are considered on their own. However, if the two measures are combined, the reduction may only be 15 percent and not the 20 percent expected by adding the two measures together.

- **TDM program effectiveness is highly dependent on individual tenants.** For office or retail TDM programs, the level of commitment by individual tenants determines the level of success. While the Project's office tenant is known at the time of the EIR preparation, tenants can change frequently over the life of a building; this makes it more difficult to forecast TDM reductions.
- **TDM program implementation requires ongoing monitoring.** If used as a mitigation measure, TDM programs will require ongoing monitoring for compliance. This may require additional staff time on the part of the lead agency.

Due to the above considerations, it may be prudent to indicate that TDM programs may be used as project mitigation, but that they cannot on their own reduce a transportation impact to a less-than-significant level, unless stringent monitoring requirements are adopted as part of the mitigation.

Transportation Demand Management Strategies with Defensible Vehicle Trip and VMT Reduction Estimates

The Project includes a robust TDM program, described in the EIR Project Description and mitigation measure AQ-2h. Several factors have already been directly accounted for in the City of San Jose Travel Demand Forecasting Model ("CSJ Model"), including increased density, improved design of development, increased destination accessibility, increased diversity of development, increased transit accessibility, expanded transit network, and added bus rapid transit system[2], and were not accounted for in the TDM program estimates below. However, these measures are supportive of vehicle trip reduction, since TDM is most effective in urban areas with access to high-quality transit. In addition, the model may indirectly account for some aspects of site design and parking management.

Using the CAPCOA report methodology, all reasonably available and quantifiable TDM measures, would be expected to result in up to a 27 percent reduction[3] in vehicle trips and VMT from the initial estimates from the CSJ Model due to the proposed TDM program. Because the TDM Program is an integrated part of the Project, the effects of a TDM program that incorporates all reasonable TDM measures is presented here to provide estimates in vehicle trip and VMT reductions that are expected from the Project. It should be noted that the most effective TDM measures (i.e. those that have the greatest trip/VMT reductions) are included as part of the Project's required TDM measures and that the Project includes an additional list of supplemental

[2] CSJ Model may, or may not, accurately capture Santa Clara Valley Transportation Authority (VTA) Rapid Bus Route 522 along Santa Clara Street in the plan area.

[3] It should be noted that the total maximum TDM effectiveness based on CAPCOA is about 32-34%, however, some of the elements are already accounted for in the CSJ Model and are excluded in these calculations to avoid double counting.

TDM measures that the Project applicant can tailor to meet the Project's TDM mitigation requirements.

The CAPCOA report presents 50 transportation measures, of which 41 are applicable at a building and site level. The remaining nine are functions of, or depend on, site location and/or actions by local and regional agencies or funders. **Table 1** summarizes the strategies according to the scope of implementation and the agents who would implement them.

Table 1: Summary of Transportation-Related CAPCOA Measures

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

Notes:
1. See full list of strategies in the CAPCOA report.

Source: CAPCOA, 2010; Fehr & Peers, 2020.

Overall, the Project has included most feasible TDM measures presented in the CAPCOA report in order to reduce the effect of vehicle trips and impact on air quality. As noted earlier, the Project would be required to achieve the maximum feasible effectiveness of a TDM program, rather than committing to providing every reasonably available TDM measure.

Pedestrian Network

The Project would have a vehicle trip and VMT reduction due to the proposed pedestrian, as well as bicycle, facility improvements on site and connecting the site to surrounding areas, including the construction/completion of the Los Gatos Creek Trail between West San Carlos Street and West Santa Clara Street. This reduction would apply to trips to and from all land uses, with individuals shifting primarily to walking and biking, with some additional transit activity.

Because Downtown San José has a robust pedestrian network and high levels of walkability, the TDM quantification conservatively assumed that the City of San José Travel Demand Forecasting Model adequately reflected the expected shift in pedestrian activity. No additional calculations were performed. CAPCOA indicates that these improvements in a downtown setting could result in up to a 2 percent reduction in VMT, for which the project takes no credit.

Bike Share Program

The Project could contribute to or implement a bikeshare program to increase use of biking and access to transit and surrounding land uses. This may include providing space for bikeshare providers to locate bikeshare stations or docks, providing subsidies for bikeshare memberships or fare, and allowing for dockless bikeshare at the Project site. This measure is not included in CAPCOA, and as such the project takes no credit or reduction from its implementation.

Car Share Program

The Project could have a vehicle trip and VMT reduction due to provision of car share subsidies to residents. This strategy reduces the need to own a vehicle or reduces the number of vehicles owned by a household by making it convenient to access a shared vehicle for trips where vehicle use is essential. Examples include programs like ZipCar, Car2Go, and Gig. This reduction would apply to trips related to residential land uses with individuals shifting primarily to transit, with some additional walking activity.

Vehicle trip reductions due to car sharing are a function of adoption rates, and the typical driving pattern of carshare members compared to non-members. Per CAPCOA:

> *% Reduction in VMT = % reduction in car-share member annual VMT * number of carshare members per shared car / deployment level based on urban or suburban context*

CAPCOA indicates that Carshare members drive 37 percent less per year[4] compared to non-carshare members, a single carshare vehicle supports 20 members, and one vehicle is deployed for every 1,000 people. As such, the car-sharing program is expected to result in a 0.7 percent reduction in VMT and vehicle trips associated with the project.

Transit Service Frequency/Speed

The Project could have a vehicle trip and VMT reduction due to provision of public/private partnerships with transit providers to improve transit service convenience and travel time competitiveness with driving for residents, employees, and visitors. This reduction could apply primarily to trips to and from all land uses, with individuals shifting primarily to transit, with some

[4] For purposes of quantifying the Project's TDM reduction, we have used the lower VMT reduction for suburban uses, as opposed to the 50% reduction in VMT for urban uses to reduce potential for double-counting.

additional walking activity. This reduction is generally already included in model outputs as part of the cumulative transit improvements.

Transit Fare Subsidy

The Project would have a vehicle trip and VMT reduction due to provision of transit passes to residents and employees, and first/last-mile subsidies to employees. This reduction would apply to commute trips, which total around 35 percent of total project trips.

Per CAPCOA, the VMT reduction expected from implementing subsidized and discounted transit passes is as follows:

*% Reduction in commute VMT = % reduction in commute vehicle trips * % of employees eligible*

Expected Percent Reduction in Commute Vehicle Trips based on Daily Transit Subsidy

	Subsidy Amount (per employee per day)			
Worksite Setting	**$0.75**	**$1.49**	**$2.98**	**$5.96**
Urban	6.2%	12.9%	20.0%	20.0%
Suburban Center	3.4%	7.3%	16.4%	20.0%
Suburban	1.5%	3.3%	7.9%	20.0%

Source: *Quantifying Greenhouse Gas Mitigation Measures,* p. 231, California Air Pollution Control Officers Association (CAPCOA), 2010.

Per CAPCOA, at a reimbursement rate of $2.98 per day or more in an urban center, commute trips are reduced by 20 percent. In the case of the proposed project, all employees at the project site would be eligible for subsidies, resulting in a 20 percent expected reduction. This program would apply to the 35 percent of trips associated with commuting purposes, resulting in a total reduction of 7 percent.

Parking Pricing Policies for Employees

The project would have vehicle trip and VMT reduction due to the project's parking pricing policies, including market-rate parking pricing for all on-site employees. Individuals changing their behavior are expected to shift fairly evenly to carpooling, transit, biking, and walking.

Per CAPCOA:

> *% Reduction in commute VMT = % reduction in commute VMT * % of employees subject to priced parking*

At a cost to park of $6 per day or more, and with 100 percent of employees subject to priced parking, due to the urban context of the area, we expect a 19.7 percent reduction in vehicle trips, applied to the 35 percent of vehicle trips associated with commute purposes. This results in a total reduction of 6.9 percent. This is quantified separately from overall parking pricing due to the

prevalence of free parking as an employee benefit; see *market-rate on-street parking* and *unbundled parking* for the effects of parking pricing on residents and visitors.

Expected Reduction in Commuter Vehicle Trips with Paid Employee Parking, by Urban Context and Parking Charge

	Daily Parking Charge			
Worksite Setting	**$1**	**$2**	**$3**	**$6**
Urban	6.9%	12.5%	16.8%	19.7%
Suburban Center	1.8%	3.7%	5.4%	6.8%
Suburban	0.5%	1.2%	1.9%	2.8%

Source: *Quantifying Greenhouse Gas Mitigation Measures,* p. 262, California Air Pollution Control Officers Association (CAPCOA), 2010.

Alternative Work Schedules & Telecommute

The Project could have vehicle trip and VMT reduction due to provision of alternative work schedules and flexibility of telecommuting. This reduction would apply to commuter trips related to office land uses (approximately 35 percent of all daily trips), with individuals reducing the need to travel altogether. This strategy is often included as part of a commute trip reduction (CTR) program.

Per CAPCOA:

> *% Reduction in commute VMT = reduction based on employee participation and strategy implemented*

Roughly 25 percent of all employees and residents are expected to work from home one day per week. This results in a 3.75 percent reduction in commute VMT. Based on changes in travel behavior due to the COVID-19 pandemic, a higher level of telecommuting/working from home may occur in the future, and as such this reduction estimate is conservative. In addition, it is applied only to the 35 percent of trips that are commute related.

Expected Reduction in Commute VMT due to Alternative Work Schedules and Telecommuting Programs, by Level of Participation

	Frequency of Telecommuting		
Employee Participation	**9-day/80-hour work week**	**4-day/40-hour work week**	**1.5 days of telecommuting**
1%	0.07%	0.15%	0.22%
3%	0.21%	0.45%	0.66%
5%	0.35%	0.75%	1.10%
10%	0.70%	1.50%	2.20%
25%	1.75%	3.75%	5.50%

Source: *Quantifying Greenhouse Gas Mitigation Measures,* p. 237, California Air Pollution Control Officers Association (CAPCOA), 2010.

Commute Trip Reduction Marketing

The Project could have a vehicle trip and VMT reduction due to implementation of a CTR marking strategy (encouragement and incentives), as well as onsite transportation coordinator(s), technology-based services, building-specific TDM plans and a non-profit transportation management agency (TMA). This reduction could apply to commuter trips related to office and residential land uses (approximately 35 percent of all daily trips). Individuals changing their behavior are expected to shift fairly evenly to carpooling, transit, biking, and walking. This strategy is often included as part of a CTR program.

CAPCOA estimates a flat reduction of 4 percent for implementing a robust commute trip marketing program. Case studies have shown that marketing effectiveness does vary substantially, and that some locations may achieve a higher reduction. This reduction applies only to the 35 percent of trips that are commute related, resulting in a total vehicle trip reduction of 1.4 percent.

Residential TDM Marketing

The residential component of the project has committed to providing marketing materials similar to those used in the Commute Trip Reduction Marketing strategy; however, these reductions would also apply to non-commute trips. An example of successful implementation of residential TDM marketing programs is the SmartTrips program, launched in several cities throughout the United States. In Portland, Oregon, new residents who were contacted through the SmartTrips program reduced their drive alone mode share by 10 percent. To maintain conservatism, this measure is quantified using the flat 4 percent reduction presented in CAPCOA, applied to the remaining 75 percent of residential trips that are not commute-based.

Employer-Sponsored Vanpool/Shuttle

The project could have a vehicle trip and VMT reduction due to provision of employer-sponsored vanpools and employer-operated express buses to complement existing, high-quality, high frequency public transit. This reduction would apply only to office-based commuter trips; all commute trips represent around 35 percent of total project trips. Individuals are expected to shift primarily to transit (which includes private shuttles), although there may be some additional shift to walking during the day. This strategy is often included as part of a CTR program.

Per CAPCOA:

> *% Reduction in commute trips = % shift in vanpool/shuttle mode share of commute trips * % employees eligible * adjustment from vanpool mode share to commute vehicle trips*

Expected Shift in Vanpool/Shuttle Mode Share of Commute Trips by Employer Size and Level of Implementation

	Level of Implementation		
Employer Size	**low**	**medium**	**high**
small	2%	5%	10%
medium	5%	11%	15%
large	10%	15%	20%

Source: *Quantifying Greenhouse Gas Mitigation Measures,* p. 253-255, California Air Pollution Control Officers Association (CAPCOA), 2010.

In addition, the program would apply to 100% of employees, with an additional VMT adjustment of 0.69 (to account for the VMT of shuttle vehicles themselves, deadheading, etc). Based on these inputs, the site expects to achieve a 13.8 percent reduction in vehicle trips, which applies only to the 35 percent of trips that are commute related, resulting in a total vehicle trip reduction of 4.8 percent.

Ride Share Program

A ride share program consists of providing resources for residents and employees to coordinate carpools. Typically, these programs consist of allowing individuals to register with basic details of their commute (start and end locations, and work hours), and matches them to others with similar commute details. This is often provided through a company mobility portal, or through a property management portal. Regional ride share matching is provided as well through 511.org.

CAPCOA estimates VMT reductions from ride share programs based on the urban context. The project is located in an urban center and can expect a 15 percent reduction in vehicle trips due to

implementing a robust carpooling/ridematching program.[5] This reduction applies to the 35 percent of trips that are commute related, resulting in a total vehicle trip reduction of 5.3 percent.

Parking Supply Limits

The project would have a vehicle trip and VMT reduction due to the project's reduced parking supply[6] and parking maximums for new uses. This reduction would apply to trips to and from all land uses, as the constrained parking supply would apply to nearly all site visitors. Individuals changing their behavior are expected to shift fairly evenly to carpooling, transit, biking, and walking.

Per CAPCOA:

> *% Reduction in VMT = (ITE parking provision - actual parking provision) / ITE parking provision * 0.5*

The project currently proposes to provide less than 25 percent of the number of parking stalls recommended by ITE's *Parking Generation* manual. This reduction has a powerful TDM effect, with an expected raw percentage reduction in trips of 37.5 percent. However, this analysis has capped the total reduction from all parking measures at 20 percent, and as such the TDM analysis is somewhat conservative.

Unbundled Parking Costs

The project would have a vehicle trip and VMT reduction due to provision of unbundling parking costs from property costs, for instance by not including a parking space in a residential unit's rent. This reduction would apply to trips related to residential land uses (approximately 28 percent of all daily trips). Individuals changing their behavior are expected to shift fairly evenly to carpooling, transit, biking, and walking.

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[5] *Quantifying Greenhouse Gas Mitigation Measures,* p. 228, California Air Pollution Control Officers Association (CAPCOA), 2010.

[6] The Project's AB900 application assigned a 19% reduction in vehicle trips due to the project's parking policies. However, because the CSJ Model includes some information on parking availability and cost in each TAZ, we have dampened the effectiveness somewhat to present a conservative analysis.

Per CAPCOA:

> *% Reduction in VMT = % Change in annual vehicle cost due to parking * elasticity * adjustment from vehicle ownership to VMT*
>
> 1) Change in vehicle cost = monthly parking cost * 12 / annual vehicle cost
>   a) $250 Monthly parking cost
>   b) $9,000 Average annual vehicle cost
> 2) -0.4 elasticity of vehicle ownership with respect to total vehicle costs
> 3) 1.00 adjustment from vehicle ownership to VMT

Source: *Quantifying Greenhouse Gas Mitigation Measures,* p. 211, California Air Pollution Control Officers Association (CAPCOA), 2010.

At a monthly parking rate of $250 per month, compared to an average annual vehicle cost of $9,000 annually, at an elasticity of -0.4%, unbundled parking pricing is expected to result in a 13.3 percent reduction in VMT. However, this analysis has capped the total reduction from all parking measures at 20 percent, and as such the TDM analysis is somewhat conservative.

On-Street Market Priced Parking

The project would have a vehicle trip and VMT reduction due to implementation of a pricing strategy for parking by pricing all on-street parking in the plan area. Priced parking would encourage "park once" behavior and may also result in area-wide mode shifts. This reduction would apply to trips related to retail land uses and all other visitor trips. Individuals changing their behavior are expected to shift fairly evenly to carpooling, transit, biking, and walking.

Per CAPCOA:

> *% Reduction in VMT = % increase in on-street parking prices * elasticity of VMT with respect to parking price*[7]

By pricing on-street parking at a competitive rate (50 to 100% above current on-street parking prices in the area), the project is expected to see a 5.5 percent reduction in VMT and vehicle trips. However, this analysis has capped the total reduction from all parking measures at 20 percent, and as such the TDM analysis is somewhat conservative.

[7] Source: *Quantifying Greenhouse Gas Mitigation Measures,* p. 214, California Air Pollution Control Officers Association (CAPCOA), 2010.

Summary of TDM Efficiency

Table 2 summarizes the TDM strategies and their individual maximum reductions[8] in CAPCOA and presents the actual effectives for the Project after taking into account elements of the Project already accounted for in the CSJ model outputs, the maximum efficiency within TDM groupings, and applicability to specific land uses.

Based on CAPCOA, combining the measures listed above could further reduce vehicle trip making and VMT from the CSJ Model by up to 27 percent through monitoring and enforcement. The Project's TDM Program includes required measures, as well as a list of supplemental TDM options to respond to the Project's evolving needs and changes in transportation trends and technologies. The Project would be required to achieve the 27 percent effectiveness of a TDM program that incorporates all reasonably available CAPCOA TDM measures.

[8] Individual maximum reduction, noted as raw reduction in Table 2, represent the reduction that would be expected if that measures were the only measure adopted. CAPCOA accounts for the maximum effectiveness for reductions categories/group of TDM measures.

Table 2: Maximum Vehicle Trip and VMT Reduction Estimates of Transportation Demand Management Strategies

TDM Strategy	Relevant Trip Purposes	Raw Percent Reduction[1,2]	Already Captured in CSJ Model?	Required or Optional in Project TDM Program?[3]	CAPCOA Strategy[4]	Total Project Reduction[5]
Pedestrian Network	All	2%	Yes	Required	SDT-1 Provide Pedestrian Network Improvements	0% (included in model outputs)
Facilitate Bike Share	All	0%	No	Optional	N/A	
Car Share Program	All	0.7%	No	Optional (Required for Residential)	TRT-9 Implement Car-Sharing Program	0.7%
Transit Service Frequency/ Speed	All	2.5%	Yes	Optional	TST-4 Increase Transit Service Frequency/Speed	0% (included in model outputs)
Transit Fare Subsidy	Office Commute Trips	20%	No	Optional	TRT-4 Implement Subsidized or Discounted Transit Program	8.6% (25% maximum x 35% of total project trips as commute trips)
Workplace Parking Pricing	Office and Retail Commute Trips	19.7%	No	Required	TRT-14 Price Workplace Parking	
Alternative Work Schedules & Telecommute	Office and Residential Commute Trips	5.5%	No	Optional (Required for Residential)	TRT-6 Encourage Telecommuting and Alternative Work Schedules	
Commute Trip Reduction (CTR) Marketing	Office Commute Trips	4%	No	Required	TRT-7 Implement CTR Marketing	
Employer-Sponsored Vanpool/ Shuttle	Office Commute Trips	13.4%	No	Optional	TRT-11 Provide Employer-Sponsored Vanpool/Shuttle	

TDM Strategy	Relevant Trip Purposes	Raw Percent Reduction[1,2]	Already Captured in CSJ Model?	Required or Optional in Project TDM Program?[3]	CAPCOA Strategy[4]	Total Project Reduction[5]
Ride Share Program	Office and Residential Commute Trips	15%	No	Optional (Required for Residential)	TRT-3 Provide Ride-Sharing Programs	
Residential Targeted Marketing / TDM Coordination	Residential non-Commute Trips	4%	No	Required for Residential	TRT-7 Implement CTR Marketing + Portland SmartTrips Case Study	<1%
Parking Supply Limits	All	35%	Partially	Required	PDT-1 Limit Parking Supply	20% (CAPCOA category maximum)
Unbundled Parking Costs	All Residential	13.3%	No	Required	PDT-2 Unbundle Parking Costs from Property Cost	
On-Street Market Priced Parking	All	5.5%	Partially	Required	PDT-3 Implement Market Price Public Parking	
Total TDM Program Reduction						**27%**

Notes:

1. Raw calculations for reductions from the CAPCOA Guide and does not include adjustments for category maximums or applications to only certain land uses.
2. Please note that disruptive trends, including but not limited to, transportation network companies (TNCs), autonomous vehicles (AVs), further migration of retail from brick and mortar to the internet, and micro-transit may affect the future effectiveness of these strategies.
3. Whether the evaluated TDM measure is a required or optional element as specified in the Project's EIR mitigation measure AQ-2h.
4. CAPCOA TDM measure identifier.
5. CAPCOA provides an estimated maximum effectiveness for each of its reduction categories. Reductions beyond those maximums are not supported by evidence.

Source: CAPCOA, 2010; Fehr & Peers, 2020.

City of San José VMT Evaluation Tool

The effectiveness of the TDM measures outlined above were evaluated using CAPCOA methods and not the City of San José's VMT Evaluation Tool (City VMT Tool). The City's VMT Tool only allows for the analysis of individual parcels and not an entire project area.

The City's VMT Tool includes four tiers of trip/VMT reduction measures:

- Tier 1: Project Characteristics – development density and integration of affordable and below market rate housing.
- Tier 2: Multimodal Infrastructure – investment in bike access, improving network connectivity, increased transit accessibility, providing bike share stations in partnership with other organizations, and pedestrian network improvements.
- Tier 3: Parking – limited parking supply and providing end of trip bike facilities.
- Tier 4: TDM Programs – car sharing, CTR marketing, commute trip reduction programs, employee cashout, subsidized transit programs, telecommuting/alternative work schedules, free long-distance shuttle service, workplace parking pricing, and ride share programs, transit service expansions, unbundled parking, and vanpool incentives,

Tier 1 and Tier 2 VMT reduction measures are generally already assumed to be accounted for in the CSJ model outputs. The maximum reduction for the Tier 3 measures is 20% and the maximum reduction for the Tier 4 measures is 25% per the City's VMT Tool. However, the cross-category maximum, which accounts for multiplicative dampening to ensure reductions are not over counted, is 40 percent for all four tiers combined.

To compare results between the two methods, representative parcels were selected for analysis through the City's VMT Tool in the southern, central, and northern areas of the project site. Though the results from individual TDM measures vary between the City VMT Tool and CAPCOA results, the maximum global effectiveness from the City's VMT Tool ranged between 15 and 20 percent for residential uses and 25 and 35 percent for employment uses. Thus, the total percent reductions outlined above are generally consistent with the City's established methodologies.

Transportation Demand Management and Mode Split

Envision San José 2040 General Plan sets a commute trip mode share target to support the City's overall multimodal access and connectivity goals. More specifically, the goal is linked to non-single occupancy vehicle (non-SOV) targets; thus, it is the Project's ultimate goal to achieve non-SOV percentages through the TDM Program's vehicle and VMT reductions. Translating vehicle trip reductions to mode share, the maximum efficiency of the TDM Program's 27 percent trip/VMT

trip reductions was converted to non-SOV rates. The 27 percent TDM Program efficiency translates to a non-SOV rate of 65 percent for the total Project, including all proposed land uses.[9]

Mode Split Target Phasing

Recognizing that transit access is an essential aspect of the success of the site's non-SOV rate an analysis of available transit and the likely effectiveness of TDM programs was used to develop project-specific performance measures. Thus, to mitigate Project impacts, the TDM Program has the following phased non-SOV requirements (also summarized in **Table 3**):

- Assuming currently available public transit service levels (pre-COVID 19), achieve a non-SOV rate of 50%, which is estimated to be equivalent to a 24% reduction in daily vehicle trips from the City model's travel demand outputs;
- Following completion of service enhancements related to Caltrain Electrification, achieve a non-SOV rate of 60%, which is estimated to be equivalent to a 26% reduction in daily vehicle trips from the City model's travel demand outputs; and
- Following completion of service enhancements related to the commencement of BART service to Diridon Station, achieve a non-SOV rate of 65%, which is estimated to be equivalent to a 27% reduction in daily vehicle trips from the City model's travel demand outputs.

The phased non-SOV rates were developed by assessing the share of trips anticipated to shift to transit, and the total percentage of transit improvements expected in each phase of development. Specifically, the non-SOV rates from the raw model outputs were compared for the Existing plus Project and Cumulative plus Project scenarios to assess the total mode shift effect of transit, and TDM reduction goals were interpolated accordingly based on whether Caltrain Electrification and/or BART to downtown San Jose would be operational.

[9] At build-out, the project is estimated to have a 50% drive alone mode share. To reach the target non-SOV rate, the following calculation was made: Target Non-SOV rate = 100% - (50% * (100% - 27%)) = 63%. Target was rounded to nearest 5 percent, resulting in the target value of 65 percent.

Table 3: Interim Non-SOV Goals

Scenario	Non-SOV Mode Share, without TDM Adjustment	Estimated TDM Trip Reduction	Final Non-SOV Goal[1]
Full Buildout, no Caltrain Electrification and no BART	41%	24%	50%
Full Buildout, no BART	47%	26%	60%
Full Buildout, with all transit infrastructure	50%	27%	65%

Note:
1. Targets were rounded to nearest 5 percentage point.
Source: Fehr & Peers, 2020