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TECHNICAL MEMORANDUM

Date:	May 12, 2023		
To:	Adam Paszkowski, Morgan Hill	*Project No.:*	073-048 Morgan Hill VMT Thresholds
From:	Vamsee Modugula & Arthur Chen, TJKM	*Jurisdiction:*	City of Morgan Hill
Subject:	**Morgan Hill VMT Mitigation Measures Memo (FINAL)**		

This memo describes VMT (Vehicle Miles Traveled) mitigation strategies that may apply to projects in the City of Morgan Hill. The traditional options for mitigating traffic impacts, such as widening a roadway or an intersection are no longer applicable due to SB743. This memo summarizes potential strategies to reduce VMT that are suited to the built environment of the City and identifies new mitigation program ideas that the City may consider as part of future planning efforts or projects.

1. MORGAN HILL VMT MITIGATION OVERVIEW

The OPR Technical Advisory (page 26) states that environmental documents must identify feasible mitigation measures for projects that results in a significant environmental impact. With the new metric of VMT, the mitigation measures should reduce the amount of vehicle travel generated by a project so that the impact is substantially reduced or avoided altogether.

The OPR Technical Advisory (page 27) provides several potential mitigation measures that can result in a reduction in vehicle travel. These types of measures are typically described as transportation demand management (TDM) strategies and can be applied at the project scale. The OPR Technical Advisory also states that mitigation fee programs can be effective at reducing VMT in the project region. Fee programs can serve as VMT mitigation if there is evidence that the fee is guaranteed to be paid and that the projects and programs funded through the fee program will be implemented.

Morgan Hill's predominately suburban and rural land use presents a challenge to the effectiveness of many common TDM strategies that reduce vehicle travel due to lower land use densities and limited travel options. Despite this challenge, identifying key mitigation measures that reduce the number of single-occupant vehicle trips and miles traveled generated by a project is still feasible.

Mitigation measures that affect VMT are those that reduce the number of single-occupant vehicles traveling to or from a particular project site. This can be accomplished by changing the proposed land uses or by implementing TDM strategies. TDM strategies have been determined to be most effective at mitigating VMT, as researched by the California Air Pollution Control Officers Association (CAPCOA). CAPCOA research, done in 2010 *Quantifying Greenhouse Gas Mitigation Measures* along with other research papers published since then gave insight on the extent of VMT mitigation possible in Morgan Hill. In addition, the Santa Clara Valley Transportation Authority (VTA) VMT Mitigation Tool was consulted to find the best data available on VMT mitigation for the city.

2. MORGAN HILL VMT MITIGATION MEASURES

Specific TDM mitigation strategies aimed at reducing VMT need to be tailored to project characteristics, and their effectiveness needs to be analyzed and documented as part of the environmental review process to see if the VMT impacts can be mitigated to an insignificant level. The list of mitigation measures below come from CAPCOA research along with information from the VTA VMT Mitigation tool. In addition, OPR guidelines allow for some degree of discretion from the lead agency depending on the type of the proposed project.

- **Increase residential density -** Where allowed by the current General Plan and zoning, design the Project with increased residential densities compared to existing conditions in the surrounding area. Increased densities affect the distances people travel and provide greater options for the mode of travel they choose. Strategy applies to residential land uses only. The denominator is based on existing residential acreage within the half-mile buffer zone of the Project parcel. *Application: Residential land uses only.*
- **Increase development density -** Where allowed by the current General Plan and zoning, increase the amount of space dedicated to mixed employment and high-density residential uses in the area surrounding the Project, particularly in a vertical configuration (defined as ½ mile buffer from the Project parcel). Having different types of land uses near one another can reduce VMT because trips between land use types are shorter and may be accommodated by non-automotive modes of transport. *Application: Residential and employment land uses.*
- **Affordable Housing** - Develop on-site deed-restricted affordable, below-market rate (BMR) housing, for low-income households to reside in the Project. At the same site, households with incomes at or below 80% of the regional median income generally make fewer trips by automobile than households with higher incomes, resulting in reduced VMT. BMR housing provides greater opportunity for families to live closer to transit. *Application: Residential land uses only.*
- **Increase Employment Density -** Where allowed by the current General Plan and zoning, design the Project with increased employment densities compared to existing conditions in the surrounding area. Increased densities affect the distances people travel and provide greater options for the mode of travel they choose. Strategy applies to employment land uses only. Employment density is measured as the ratio of the number of employees to the net commercial and industrial acreage in a given area. *Application: Employment land uses only.*
- **Increase Bike Access -** Implement bicycle facilities that close gaps in the bicycle network and/or improve the existing bicycle network (e.g. construct barrier or buffer for an existing bike lane). Improving bike access to the Project promotes biking as an alternative to driving, and reduces VMT. VMT reductions are based on a reduction of the distance between the project frontage to a bicycle facility. This measure only applies to bicycle facilities that provide a dedicated lane for bicyclists or a completely separated right-of-way for bicycles and pedestrians. These facilities include Class I (trail) Class II (bike lane), and Class IV (protected bike lane) bikeways. This measure would not be applicable if the resulting gap between the project and the external bikeway exceeds 1/3 mile. *Application: Residential and employment land uses.*
- **Network Connectivity / Design Improvements -** Build new street connections and/or connect cul-de-sacs to provide pedestrian and bicycle access. This measure enhances walkability, connectivity, and street accessibility within a neighborhood. VMT reductions are based on the change to intersection densities within a 1/4 mile buffer of the Project, and internal connections inside the

Project area. Intersection densities calculation should be conducted in GIS. Proposed improvements should be negotiated with the City. *Application: Residential and employment land uses.*

- **Increase Transit Accessibility -** Building the project within proximity to a transit station or stop with high-quality service enhances access to transit, which facilitates the use of transit for people traveling to/from the project site. Facilitating transit use results in a mode shift from driving to transit and thereby reduces VMT. In the SCC VMT Evaluation Tool, this strategy is applied by taking the distance between the project site and the closest transit stop without project improvements and the distance to the closest transit stop with project improvements and applying an elasticity factor; therefore, the project can reduce its VMT by relocating a transit stop closer to the site. Proposed changes to transit stop locations are subject to negotiations with the applicable transit operator. *Application: residential and employment land uses.*
- **Traffic Calming Measures -** Implement pedestrian/bicycle safety and traffic calming measures both on-site and in the surrounding neighborhood. Providing traffic calming measures promotes walking and biking as an alternative to driving, and reduced VMT. VMT reductions are based on proposed median refuges, bulb-outs, and/or other pedestrian crossing enhancements beyond the project frontage. Proposed traffic calming features such as speed bumps require further study and conceptual City Approval. *Application: Residential and employment land uses.*
- **Pedestrian Network Improvements -** Implement pedestrian improvements both on-site and in the surrounding neighborhood. Improving the pedestrian connections encourages people to walk instead of drive and reduces VMT. Pedestrian improvements include but are not limited to: sidewalks; marked or signalized pedestrian crossings at intersections; lighting; and curb ramps. Some proposed pedestrian improvements requires additional study and conceptual City approval. *Application: Residential and employment land uses.*
- **Provide Bike Facilities -** This strategy requires the project developer to provide and maintain facilities for bicycle users at the project site. Examples of end-of-trip facilities include bike parking, bicycle lockers, showers, and personal lockers. The extent of VMT reduction is based on the Project provision of secure bike parking or secure bike parking and additional facilities. *Application: Employment land use only.*
- **School Pool Program -** Organize a program that matches families in carpools for school pick-up and drop-off. Organizing a School Pool Program helps match parents who transport students to schools without a busing program, including private schools, charter schools, and neighborhood schools where students cannot walk or bike. The school pool program would be open to all families in the development. School pools reduce the total number of vehicle trips traveling to and from schools, thereby reducing VMT. Subject to negotiations with the City and possible negotiations with schools serving the Project. *Application: Residential land uses only.*
- **Implement Bike Sharing Program -** This strategy requires the project developer to dedicate space for or provide subsidies to a bike sharing system, ideally one with high penetration in a larger area, such as Bay Wheels. Bike share substitutes for some driving trips and provides a first/last-mile connection for transit users, reducing auto trips and thereby reducing VMT. This reduction only applies if a bike share station is eventually built on site. *Application: residential and employment land uses.*
- **Implement Commute Trip Reduction Marketing/Education -** Implement a marketing campaign targeting all Project employees and visitors that encourages the use of transit, shared rides, and active modes. Marketing strategies may include new employee orientation on alternative

commute options, event promotions, and publications. Providing information and encouragement to use transit, share ride modes, and active modes, reducing drive-alone trips and thereby reducing VMT. *Application: employment land uses only.*

- **Commute Trip Reduction Program -** Provide a comprehensive program to reduce the number of drive-alone commute trips to the Project and actively monitor and react to changes in mode share. Program includes encouraging and assisting employees in using an alternative commute mode. Tools include carpooling encouragement, ride share assistance, flexible/alternative work schedules, vanpool assistance, and bicycle end of trip facilities. *Application: employment land uses only.*
- **Subsidized Transit Program -** This strategy requires project employers or building operators to provide either partially or fully subsidized transit passes for all project affiliates (employees and/or residents). Providing subsidies for transit use encourages people to use transit rather than driving, thereby reducing VMT. This strategy differs from TP 14 Transit Service Expansion in that subsidies are provided to the employees or residents, not the public transit agency. Note that certain discounted transit pass programs have specific requirements; for instance, VTA's SmartPass Program requires 100% subsidy for all residents / employees. For subsidies applied to VTA's transit lines, the project must be within a half mile radius of the nearest bus stop. *Application: residential and employment land uses.*
- **Telecommuting and Alternative Work Schedule Program -** This strategy requires project employers to allow and encourage employees to telecommute from home when possible, or to shift work schedules such that employees work slightly longer days resulting in fewer days in the office in a one-week or two-week period. This strategy reduces commute trips, thereby reducing VMT. *Application: employment land uses only.*
- **Free Door-to-Door Transit Fleet -** Provide direct shuttle service to the Project site from areas with high concentrations of employees. This strategy reduces drive-alone commute trips, thereby reducing VMT. *Application: employment land uses only.*
- **Alternative Transportation Benefits -** This strategy requires project employers to provide general commute benefits to employees, which may include financial subsidies or pre-tax deductions for transit, carpooling, and vanpooling activities. Transit in this case can apply to VTA bus routes and / or other city provided transit systems, such as Morgan Hill Quick Ride on-demand rideshare service (MoGo). *Application: employment land uses only.*
- **Access to Neighborhood Schools -** Project contributes to the development of a neighborhood school that would serve families living in the development. Neighborhood schools primarily serve the neighborhoods immediately surrounding the school and allow students to walk or bike to school, reducing the use of automobiles for drop-off and pick-up trips and thereby reducing VMT. *Application: residential land uses only.*
- **Ride-Sharing Programs -** Organize a program to match individuals interested in carpooling who have similar commute patterns. Strategy encourages the use of carpooling, reducing the number of vehicle trips and thereby reducing VMT. (Expected participation rate ranges between 2-10%) *Application: employment land uses only.*
- **Subsidize Public Transit Service Upgrades -** Project subsidizes transit service through fees and contributions to the transit provider, thereby improving transit service to the Project, resulting in increased use of transit and reduced VMT. VMT reduction is based on the contribution's effect on transit frequency and the number of routes affected by contributions. Strategy differs from the "Subsidized or Discounted Transit Program" in that subsidies are provided to the public transit

agency, not the employees. This strategy must be negotiated with the City and VTA. Transit in this case can apply to VTA bus routes and / or other city provided transit systems, such as Morgan Hill Quick Ride on-demand rideshare service (MoGo). *Application: residential and employment land uses.*

- **Behavioral Intervention -** This strategy requires the project to provide intensive one-on-one counseling and encouragement, along with subsidies, to encourage individuals to use non-drive alone modes. Implementing this program encourages the use of transit, shared ride modes, bicycling, walking, and telecommuting, reducing drive-alone trips and thereby reducing VMT. *Application: residential and employment land uses.*
- **Vanpool Incentives -** The strategy requires project employers or building operators to provide subsidies for individuals forming new vanpools for their commute. This encourages the use of vanpools, reducing drive-alone trips and thereby reducing VMT. *Application: applies to employment land uses only.*
- **Voluntary Travel Behavior Change Program -** Provide a program that targets individual attitudes towards travel and providing tools for individuals to analyze and alter their travel behavior. Voluntary Travel Behavior Change programs include mass communication campaigns and travel feedback programs such as travel diaries or feedback on calories burned from activities and travel. This strategy encourages the use of shared ride modes, transit, walking, and biking, thereby reducing VMT. *Application: residential and employment land uses.*