

# TRANSPORTATION IMPACT ANALYSIS GUIDELINES

City of San Mateo, CA



June 17, 2020

# 1. INTRODUCTION

The Transportation Impact Analysis Guidelines document provides guidance to city staff, applicants, and consultants on the requirements to evaluate transportation impacts for projects in the City of San Mateo (City). It is intended:

- ▶ to promote conformance with applicable city and state regulations;
- ▶ to provide evaluation consistent with the California Environmental Quality Act (CEQA);
- ▶ to ensure consistency in preparation of studies by applicants and consultants and
- ▶ provide predictability in content for staff and the public in reviewing studies.

Although these guidelines are intended to be comprehensive, not all aspects of every transportation analysis can be addressed in this framework. City staff reserve the right to use judgement to request exemptions and/or to modify requirements for specific projects at the time of the review application.

## 1.1. BACKGROUND

The Transportation Impact Analysis Guidelines specifically address the requirements of California Senate Bill (SB) 743 which mandated specific types of CEQA analysis of transportation projects effective July 1, 2020.

### 1.1.1. SB 743 Requirements

Prior to implementation of SB 743, CEQA transportation analyses of individual projects typically determines impacts on the circulation system in terms of roadway delay and/or capacity usage at specific locations, such as street intersections or freeway segments. Senate Bill 743 (SB 743), signed into law in September 2013, required changes to the guidelines for CEQA transportation analysis. The changes include the elimination of auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts. The purpose of SB 743 is to promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.

Under SB 743, a project's effect on automobile delay shall not constitute a significant environmental impact. Therefore, level of service (LOS) and other similar vehicle delay or capacity metrics can no longer serve as transportation impact metrics for CEQA analysis. The California Office of Planning and Research (OPR) has updated the CEQA Guidelines and provided a final technical advisory in December 2018, which recommends vehicle miles traveled (VMT) as the most appropriate measure of transportation impacts under CEQA. The California Natural Resources Agency certified and adopted the CEQA Guidelines including the Guidelines section implementing SB 743. The changes have been approved by the Office of the Administrative Law and are now in effect.

### 1.1.2. Local Transportation Analysis

Revisions to CEQA transportation analysis requirements do not preclude the application of local general plan policies, municipal and zoning codes, conditions of approval, or any other planning requirements through a city's planning approval process. These requirements aim to ensure adequate operation of the transportation system in terms of transportation congestion measures related to vehicular delay and roadway capacity. As such, the City of San Mateo continues to apply congestion-related transportation impact analysis and mitigation for land development projects through planning approval processes outside CEQA. These requirements are discussed in Section 3, Local Transportation Analysis.

## 1.2. TRANSPORTATION IMPACT ANALYSIS REPORTS

A transportation impact analysis (TIA) report typically consists of two types of analysis, which this manual provides guidance for:

1. CEQA Analysis
2. Local Transportation Analysis

Not all projects require both analyses. For example, a project could meet the screening criteria for being located in a high-quality transit area and be exempt from the preparation of a detailed CEQA VMT analysis. Such a project may only be required to provide a local transportation analysis.

### 1.2.1. CEQA Analysis

The CEQA analysis consists of evaluation measures including conflicts with circulation policies, vehicle miles travelled (VMT), hazards and emergency access. The quantitative methodology, significance thresholds and mitigation measures for conducting the transportation analysis are primarily based on VMT metrics. The analyses related to VMT are part of the environmental review process and must meet CEQA requirements.

### 1.2.2. Local Transportation Analysis

The City can require local non-CEQA analysis to address traffic operations, safety issues and needed project design features related to a proposed land use project, as well as to analyze site access and internal circulation. The local transportation analysis may be used to assess transportation effects in relation to the City's policies in the General Plan and other planning documents.

## 2. CEQA ANALYSIS REQUIREMENTS

This section discusses the requirements for conducting analyses for projects under environmental review, consistent with requirements from SB 743. Under CEQA, a lead agency has the authority to determine its own significance thresholds and methodologies for technical analysis, taking into account its own development patterns, policy goals and context. Lead agencies can make their own specific decisions regarding methodology and thresholds, presuming their choices are supported by substantial evidence.

The CEQA Appendix G Environmental Checklist Form identifies the following four impact types for transportation:

- a) Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?
- b) Would the project conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b) (requirement to use VMT)?
- c) Would the project substantially increase hazards due to a geometric feature or incompatible uses?
- d) Would the project result in inadequate emergency access?

Consistent with State CEQA Guidelines section 15064.3, the City of San Mateo has adopted thresholds of significance to determine when a project will have a significant transportation impact based on VMT. The City has developed screening criteria to streamline the analysis for projects that meet certain criteria, referred to as *project screening*.

### 2.1. LAND USE PROJECTS

This section provides information for analyzing individual land use projects, including the process to aid in deciding if a detailed VMT analysis is needed for a land use project. Figure 1 presents a flow chart depicting how a land use project would be analyzed under VMT-based metrics.

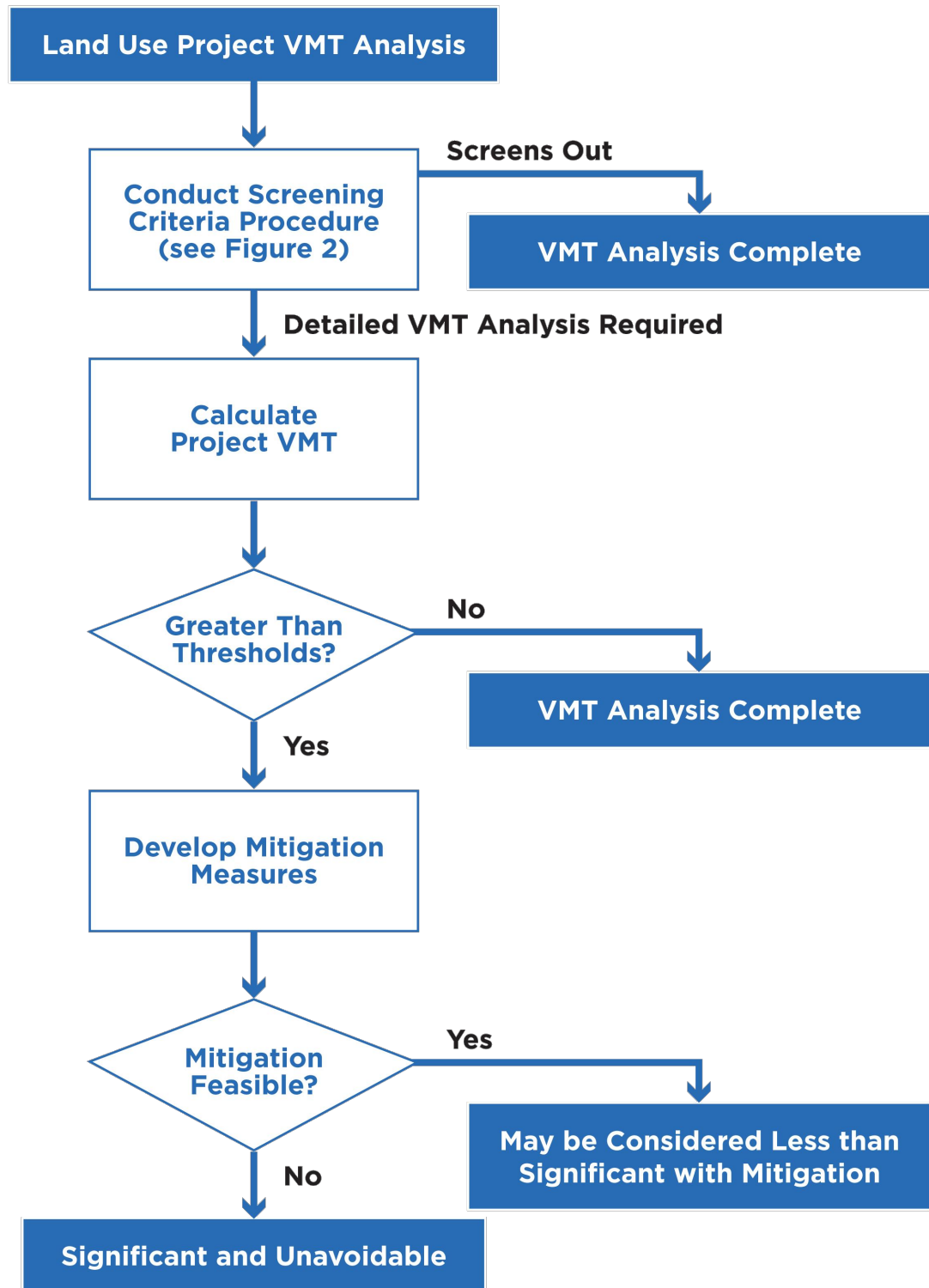
#### 2.1.1. Project Screening

A project requires a detailed VMT analysis unless it meets at least one of the city's five screening criteria:

- 1. Small projects
- 2. Provision of affordable housing
- 3. Local-serving retail
- 4. Project located in a High-Quality Transit Area (HQTa)
- 5. Project located in low VMT area

Figure 2 presents a chart depicting how a land use project would be analyzed under the proposed screening criteria. A project that meets at least one of the screening criteria would have a less than significant VMT impact due to project or location characteristics.

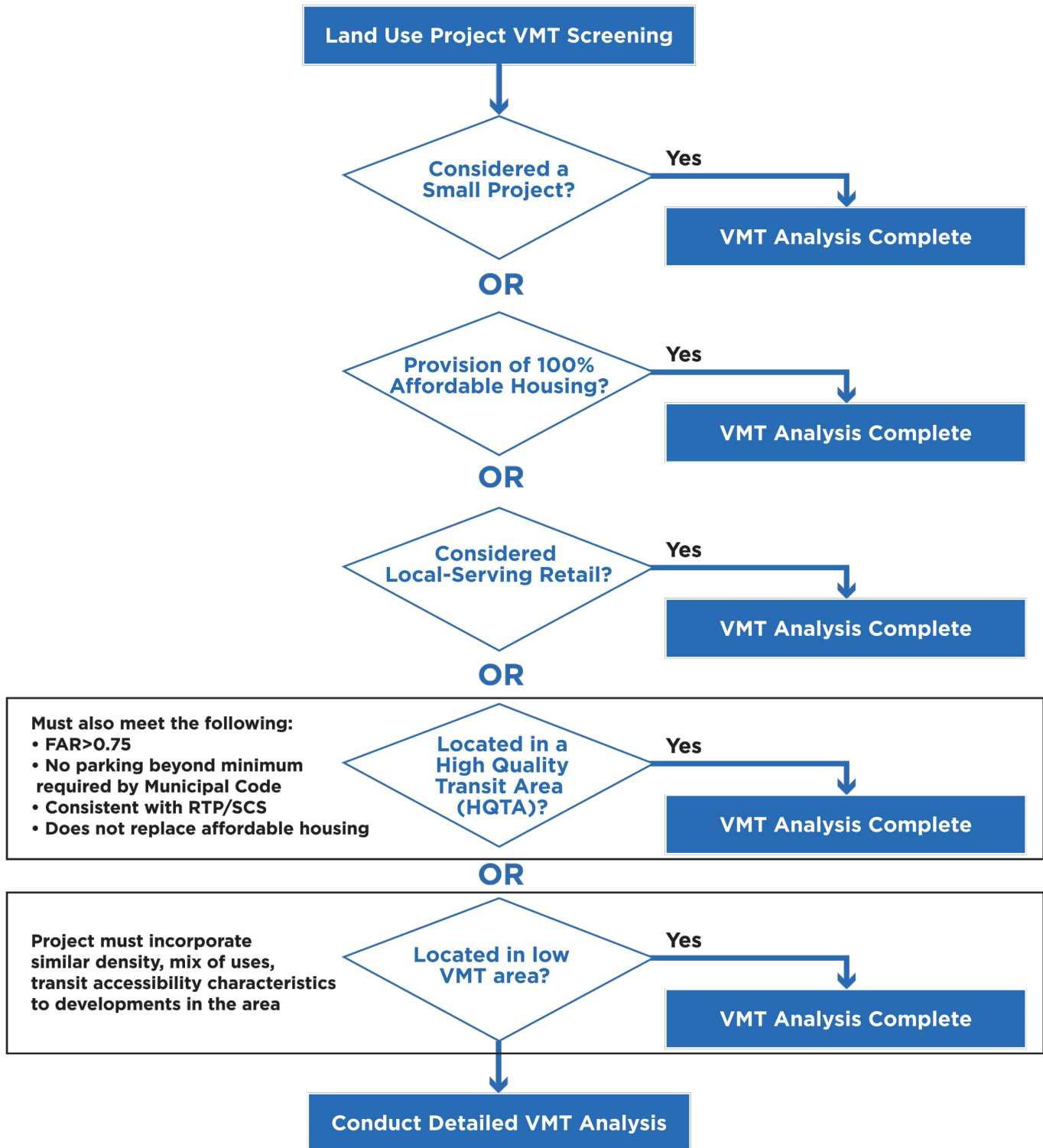
## LAND USE PROJECTS VMT ANALYSIS FLOW CHART



Land Use Projects VMT Analysis Flow Chart  
San Mateo, CA

Figure  
1

## LAND USE PROJECTS SCREENING CRITERIA



Land Use Projects Screening Criteria Flow Chart  
San Mateo, CA

Figure  
2

#### 2.1.1.1. Small Projects

Projects that generate or attract fewer than 110 vehicle trips per day are presumed to cause a less than significant VMT impact. Projects that typically generate 110 vehicle daily trips are shown in **Error! Reference source not found..**

**Table 1: Sample Small Projects (less than 110 daily trips)**

Land Use Type	Number of Units/ Square Feet	Corresponding Daily Trips
Single Family Residential	10 Dwelling Units	110
Multi-Family Residential	11 Dwelling Units	104
Office	11,000 SF	107

Trips calculated trip rates from the ITE Trip Generation Manual 10<sup>th</sup> Edition.

#### 2.1.1.2. Affordable Housing

Residential projects with 100 percent deed restricted affordable housing are presumed to have a less than significant transportation impact. Affordable housing would be designated as for sale or rental housing below market-rate. If a project contains less than 100 percent affordable housing, the portion that is affordable should be screened out of needing a detailed VMT analysis. This applies to affordable housing projects anywhere in the City.

#### 2.1.1.3. Local-Serving Retail and Public Services

Projects that are locally serving retail with 50,000 square feet gross floor area or less are presumed to have a less than significant impact. This applies to the entirety of a retail project; for a mixed-use project, this screening criteria should be applied to the retail/commercial component separately to determine if that portion of the project screens out of a detailed VMT analysis.

The determination of local-serving retail would be based on its location, the characteristics of the project and the vicinity of the site, as well as the envisioned goods and services the retail development would provide. Generally, local-serving retail would primarily provide goods and services that most people need on a regular basis and are purchased close to where people live. Groceries, medicines, fast food and casual restaurants, fitness and beauty services are typical goods and services provided by local-serving retail centers.

Public services (e.g., police, fire stations, public utilities, neighborhood parks) generally do not generate VMT. Instead, these land uses are often built in response to development from other land uses (e.g., office and residential). Therefore, these land uses can be presumed to have less than significant impacts on VMT. However, this presumption would not apply if the project is sited in a location that would require employees or visitors to travel substantial distances and may require a detailed VMT analysis.

The City may require a project applicant to provide a market analysis to demonstrate that the project meets the characteristics of a neighboring retail development based on the goods and services provided relative to the geographic location, the customer base and other nearby retail uses.

#### *2.1.1.4. High-Quality Transit Area (HQTa)*

Projects that are located in a high-quality transit area (HQTa) would not require a detailed VMT analysis. Attachment A depicts the existing HQTa in the City as of June 2020. Currently, only Caltrain stations in the City are qualified as high-quality transit. However, the City will monitor transit service changes and update the high-quality transit map annually or as needed.

The presumption to exempt a project from a detailed VMT analysis does not apply if the project:

- ▶ has a floor area ratio (FAR) of less than 0.75;
- ▶ includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);
- ▶ is inconsistent with the applicable Metropolitan Transportation Commission's (MTC) Sustainable Communities Strategy (SCS), as determined by the City; or
- ▶ replaces affordable residential units with a smaller number of moderate- or high-income residential units.

#### *2.1.1.5. Project Located in Low VMT Areas*

Residential and employment projects that are proposed in areas that generate VMT below adopted City thresholds are presumed to have a less than significant VMT impact and thus can be screened out. The City provides screening maps based on transportation analysis zones (TAZs) and results from the city's travel model. The following types of projects may be screened out of detailed VMT analysis using this criterion:

- ▶ Residential projects proposed in TAZs with total daily resident-based VMT per capita that is 15% less than the existing average baseline level for the County of San Mateo
- ▶ Office or the employment portions of other non-residential uses with total daily employee-based VMT per employee that is 15% less than the existing average baseline level for the County of San Mateo

The VMT maps prepared in Attachment B denote TAZs that meet these thresholds in green.

#### *2.1.1.6. Consistency with RTP/SCS*

If a proposed project is inconsistent with the adopted MTC Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), the city will evaluate whether that inconsistency may result in a significant impact on transportation. Therefore, projects that are inconsistent with the RTP/SCS would not qualify for screening out of a detailed VMT analysis.



### 2.1.2. Significant Impact Thresholds

For projects which do not meet any of the screening criteria, the City of San Mateo has adopted VMT thresholds for land use development projects based on a review of long range plans and policies for the City and for the Bay Area region. The City's Climate Action Plan (CAP) sets an emissions reduction target of 15% below 2005 levels by 2020. The plan also targets lower per-capita targets for 2030 and 2050. Furthermore, the Sustainable Communities Act from the State of California sets the Bay Area's GHG target to 7% per capita reduction by 2020 and 15% per capita reduction by 2035. The intent of SB 743 is to bring CEQA transportation analyses into closer alignment with other statewide policies regarding GHG, complete streets, and smart growth. Therefore, using a threshold of 15% below average VMT for residential and office projects is consistent with established citywide and regional GHG emission goals. Note: these goals are appropriate with the current SB 743 Legislation, but they may adjust in time as GHG emissions goals evolve.

The OPR technical advisory recommends comparing a project's estimated VMT/capita or VMT/employee to average values on a regional or citywide basis. For retail projects, total VMT within the area affected by the project is measured.

The significance thresholds and specific VMT metrics used to indicate a significant transportation impact are described by land use type in Table 2.

### 2.1.3. VMT Analysis Methodology

Projects that do not meet the screening criteria must include a detailed evaluation of the VMT generated by the project.

#### *2.1.3.1. Regional Average VMT*

Regional average VMT per capita and VMT per employee values are determined using the city's regional travel demand model.

- ▶ The VMT per capita includes all home based trips made by residents, including their trips while away from home, but does not include trips visiting residences (such as delivery vans).
- ▶ The VMT per employee includes trips made by employees to and from their workplaces, including trips to and from points other than the employees' homes, but does not include visitors to the employment sites.

#### *2.1.3.2. VMT per Capita or per Employee*

For residential or employment land uses where VMT/capita or VMT/employee are used to determine impacts, the following analysis methods are available:

- ▶ The VMT/capita or VMT/employee may be looked up using the latest screening maps (Attachment B) and the TAZ (or TAZs) containing the project site.

- If the value for the TAZ is zero or significantly different than the values in surrounding TAZs due to a lack of land use data in the existing condition for the project TAZ, the City may allow the VMT/capita or VMT/employee to be based on an average of surrounding TAZs.

**Table 2: Impact Thresholds by Land Use Type**

Land Use Type	Impact Threshold <sup>1</sup>
Residential	<p>A significant impact occurs if a Proposed Project VMT/capita is greater than 15 percent below the existing San Mateo County average.</p> <ul style="list-style-type: none"> <li>• Regional Average: 15.5 VMT/capita</li> <li>• Impact Threshold: 13.1 VMT/capita</li> </ul>
Office	<p>A significant impact occurs if a Proposed Project VMT/employee is greater than 15 percent below the existing San Mateo County average.</p> <ul style="list-style-type: none"> <li>• Regional Average: 18.0 VMT/employee</li> <li>• Impact Threshold: 15.3 VMT/employee</li> </ul>
Retail	<p>A significant impact occurs if a Proposed Project causes a net increase in total VMT.</p> <p>The total VMT for the region without and with the project is calculated. The difference between the two scenarios is the net change in total VMT that is attributable to the project.</p>
Other land uses	<p>The City will make a determination of the applicable thresholds on a case-by-case basis based on the land use type, project description and setting. Student housing and senior housing land uses should be treated as residential for screening and detailed VMT analysis. Research and development, industrial, medical offices, assisted living, and hospital projects may be evaluated as office projects using the VMT/employee metric. Projects such as hotels, private schools, grocery stores, local-serving entertainment venues, religious institutions, regional parks, athletic clubs and medical offices should be treated as retail for detailed VMT analysis.</p>
Mixed-Use Projects	<p>Evaluate each component of a mixed-use project independently and apply the significance threshold for each land use type. Alternatively, the evaluation would apply</p>

	only the project's dominant use if it generates 80% of the total daily trips.
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Note:

Impact thresholds provided in this table represent the level used to indicate a significant transportation impact under VMT metrics.

VMT Threshold values may change over time as updated traffic models or new ABAG land uses are adopted.

#### 2.1.3.3. Total VMT

For land use projects that use total VMT to determine impacts (such as retail), total VMT may be calculated using the city's travel model or another method backed by substantial evidence.

- ▶ Smaller projects may use the total daily vehicle trip generation (determined using references such as the most current Institute of Transportation Engineers *Trip Generation Manual*) multiplied by an average trip length determined from the City's model or a market research analysis.
- ▶ If a proposed project would affect the balance of residential and non-residential land uses in an area and is a relatively large project, it is recommended that the city's model be rerun to include the proposed project, and total regional VMT calculated from the model results without and with the proposed project.

#### 2.1.3.4. Exclusion of Truck VMT

It shall be noted that SB 743 does not apply to goods movement (i.e. trucks). Section 15064.3 of the CEQA Guidelines states that VMT for transportation impacts refers to. "... the amount and distance of automobile travel...". Therefore, the VMT associated with trucks and the movement of goods is not required to be analyzed and mitigated for the evaluation of transportation impacts under CEQA. Projects that generate a substantial amount of truck traffic also generate automobile trips, therefore project-related automobile trips would be subject to VMT analysis and mitigation. The VMT for all vehicles including heavy trucks related to a project will still be calculated as input for air quality, GHG, noise and energy impact analyses to be evaluated in non-transportation parts of the environmental analysis.

#### 2.1.4. Redevelopment Projects

If a project replaces existing uses and the project results in a net decrease in overall VMT, it may be presumed that the project would result in a less than significant impact.

If a project replaces existing uses and the project leads to a net overall increase in VMT compared to the previous uses, then the thresholds for the new land uses should apply. If net VMT increases, then the appropriate VMT metrics and thresholds should be applied. For example, if a residential

project replaces an office project resulting in a net increase in VMT, the project's VMT/capita should be compared with the thresholds for residential projects. If the project is a mixed-use project, then the recommended approach for analyzing mixed-use projects should be applied to analyze each individual use.

#### 2.1.5. Cumulative Impacts

Per Section 15064 (h) (1) of the CEQA code, "when assessing whether a cumulative effect requires an EIR, the lead agency shall consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable."

An analysis of cumulative impacts generally would fall under two categories:

1. VMT per capita or per employee
2. Total VMT

These are described below.

##### *2.1.5.1. VMT per Capita or per Employee*

For land uses evaluated under an efficiency metric (VMT/capita for residential or VMT/employee for office/employment), if a project falls below the threshold it would also result in less than significant cumulative impacts. In other words, a project that falls below an efficiency-based threshold would have no cumulative impact distinct from the project impact.

##### *2.1.5.2. Total VMT*

For land uses evaluated using total VMT (retail, hotels, etc.), when absolute VMT metrics (such as total VMT recommended for retail and transportation projects) are used, a cumulative VMT impact analysis may be appropriate. Projects must demonstrate consistency with the City of San Mateo General Plan to address cumulative impacts. A determination for consistency with the General Plan or RTP/SCS would be made by the Planning Commission or City Council and would be based on factors such as density, design, and consistency with the city's General Plan goals and policies. Inconsistencies may be identified if the proposed land use quantities are beyond the designation for the project site in the General Plan or RTP/SCS, in which case the project may result in higher VMT compared to the applicable plan.

If a project is consistent with the General Plan or RTP/SCS, it will be considered as part of the cumulative condition to meet the General Plan's long-range transportation goals, and therefore will result in a less than significant cumulative impact. If a project is not consistent with the General Plan, a cumulative impact analysis would be required to determine if the project would result in a net increase in VMT.

### 2.1.6. Mitigation

If a project would result in significant impacts, CEQA requires mitigation measures to be implemented to reduce or mitigate an impact. For VMT impacts, a combination of measures from several VMT reduction strategies may be implemented – project characteristics, multimodal improvements, parking, and TDM. VMT is reduced by implementing strategies that reduce the number of automobile trips generated by the project, shift more trips from automobile to non-automobile modes, and/or reduce the distances that people drive. Generally, these reductions can be achieved by the implementation of Transportation Demand Management (TDM) strategies.

Measures to reduce VMT have been documented by several sources such as the California Air Resources Board (CARB) list of transportation and land use strategies for reducing greenhouse gas emissions, the SB 743 Implementation Project resources, the California Pollution Control Offices Association (CAPCOA) report on quantifying the greenhouse gas mitigation measures, more recent research for the West Riverside Council of Governments (WRCOG), and the SANDAG Mobility Management VMT Reduction Calculator Tool – Design Document.

Projects for which impacts are determined to be significant are required to propose a list of VMT reduction measures and document the associated percent reduction in VMT. Project VMT is calculated by applying the percent reduction. Project VMT is then compared to the threshold of significance to evaluate the project's CEQA transportation impact. The city will review and approve the proposed mitigation and the calculated VMT percentage reductions.

## 2.2. TRANSPORTATION PROJECTS

This section provided information for analyzing transportation projects on roads within the City's jurisdiction.

### 2.2.1. Determining Need for Detailed VMT Analysis

The City of San Mateo requires an analysis of transportation projects if they are expected to increase VMT, primarily projects that encourage the use of single occupancy automobile such as the addition of through travel lanes. However, transportation projects that have already been specifically analyzed in a citywide plan (such as a General Plan update) may be exempt from a detailed VMT analysis. This exemption may be granted if the necessary VMT analysis and potential mitigations would have already been calculated and identified at the plan level.

Conversely, projects that would likely not lead to an increase in vehicle travel, which promote use of transit and active transportation should not require a VMT analysis. Project types that would not likely lead to a substantial or measurable increase in vehicle travel and generally should not require a VMT analysis include:

- ▶ road rehabilitation
- ▶ safety projects

- ▶ auxiliary lanes less than one mile in length
- ▶ turning lanes
- ▶ conversion to managed or transit lanes
- ▶ road diets
- ▶ removal or relocation of parking spaces
- ▶ addition of non-motorized, transit, and active transportation facilities.

These projects generally do not increase capacity enough to result in an impact for VMT. A full list is provided in Attachment C.

This approach is consistent with the intent of SB 743 by promoting that VMT-reducing projects will be streamlined and projects that have the potential to increase VMT will be thoroughly assessed and mitigated as appropriate.

### 2.2.2. VMT Analysis for General Plan or RTP/SCS Projects

For projects that have not been included in the General Plan or RTP/SCS or are modifications and replacements, any growth in VMT attributable to the transportation project would result in a significant impact. For example, a transportation project that replaces a project included in the General Plan and would generate less VMT compared to the project included in the General Plan would have a less than significant impact. Projects not included in the General Plan or RTP/SCS would have a significant impact if they cause a net increase in VMT.

### 2.2.3. VMT Analysis Methodology and Tools

Projects that have already been included and evaluated in the General Plan or the RTP/SCS would have a less than significant impact.

For transportation projects that require a detailed VMT analysis (e.g., increasing vehicular throughput or not included in a citywide plan), the City should require analysis using the most current travel demand model to estimate changes to citywide VMT due to rerouted trips. To capture long-term effects, an induced demand assessment should be required using the following formula:

$$[\% \text{ increase in lane miles}] \times [\text{existing VMT}] \times [\text{elasticity}] = [\text{VMT resulting from the project}]$$

The city requires total VMT in the city as the appropriate VMT metric, with the impact threshold being any increase in total VMT. The analysis shall be performed for the long-range horizon year, normally 20 years out. This approach would discourage induced demand impacts by requiring that a baseline level of VMT in the City not be exceeded.

#### 2.2.4. Mitigation for Transportation Projects

Mitigation measures for transportation projects generally seek to reduce VMT by discouraging more single passenger automobile travel or funding TDM measures. The following are potential mitigation measures for transportation projects:

- Tolling new lanes to encourage carpools and fund transit improvements;
- Converting existing general purpose lanes to HOV or HOT lanes;
- Implementing or funding off-site travel demand management; and
- Implementing corridor signal coordination to improve traffic throughput on existing lanes.
- Implementing Intelligent Transportation Systems (ITS) strategies to improve passenger throughput on existing lanes.

### 3. LOCAL TRANSPORTATION ANALYSIS

A non-CEQA local transportation analysis may be required for land use projects in addition to the CEQA analysis to evaluate the effects of a development project on the circulation network, primarily on local access and circulation in the proximity of a project site. According to Policy C2.5 of the General Plan Circulation Element, the City requires site-specific traffic studies for development projects where there may be a substantial adverse condition or effect on the local street system. Traffic effects caused by a development project are considered to be unacceptable and warrant improvements if the addition of project traffic results in a cumulative intersection level of service exceeding the acceptable level established in Policy C-2.1; where there may be safety hazards created; or where there may be other substantial effects on the circulation system. This analysis would address traffic operations, safety issues and needed project design features related to a proposed land use project, as well as site access and internal circulation.

#### 3.1. STUDY AREA

At a minimum, the study must examine signalized and unsignalized intersections that fall into at least one of the following categories:

- Project driveways
- Intersections at either end of the block on which the project is located or up to 500 feet from the primary project driveways, whichever is farther
- Intersection of collector or higher classified streets where the project adds 100 or more peak hour trips

The study should also examine any other locations necessary as determined by City staff.

#### 3.2. DATA COLLECTION AND STUDY PERIODS

Traffic counts should be collected and included in the Appendix. Available existing counts can be used if they are less than 18 months old and the traffic volumes have not been significantly changed due to more recent development in the vicinity. The City may allow the use of older data or alternative data collection sources due to atypical conditions that may be causing a substantial disruption of traffic patterns or volumes such as long-term roadway construction or closures, severe disruptions of economic, employment activity and widespread mandated closures of public and private institutions. The City Engineer or the designee shall approve all requests to use other available traffic counts.

Common rules for conducting traffic counts include but are not limited to:

- Peak hour turning movement volumes shall be conducted on Tuesdays, Wednesdays, or Thursdays during weeks not containing a holiday. Counts shall be conducted in favorable weather conditions.



- ▶ Counts shall be collected when schools and colleges are in session, but not during the first two weeks that the schools and colleges are in session. Counts collected when schools and colleges are not in session shall be approved by the City Engineer, including a methodology for adding historical school traffic volumes into the analysis.
- ▶ Two-hour peak period vehicular, bicycle, and pedestrian volumes should be collected for all study intersections for the weekday AM (7:00 - 9:00 AM) and PM (4:00 - 6:00 PM) periods, or unless otherwise specified (such as midday or weekend peak periods). Weekday AM and PM peak hour LOS analysis should be conducted for all study intersections for all scenarios.
- ▶ One 24-hour count should be collected on the main road adjacent to the project site. This count is useful for understanding the 24-hour count profile, and can also be used to assist with manual adjustments.

During the scoping process, City staff may require additional peak hours for analyses and periods for traffic counts due to a project's unique traffic patterns (such as a school or an event center).

### 3.3. STUDY SCENARIOS

Intersection levels of service should be analyzed for the following scenarios:

- Existing Conditions
- Opening Year Conditions
- Opening Year Plus Project Conditions (project-generated traffic added to Opening Year volumes)
- Cumulative Conditions (typically 20 to 25 years in the future or based on the cumulative travel demand model, but should be determined in consultation with City staff)
- Cumulative Plus Project Conditions (project-generated traffic added to existing traffic volumes)

### 3.4. FUTURE TRAFFIC VOLUME FORECASTING METHODOLOGY

Once the cumulative analysis year has been established in coordination with City staff, opening year and cumulative year traffic volumes should be developed. Future volumes should be forecast and interpolated or extrapolated based on outputs from the base year and future year versions of the City of San Mateo travel demand model. Volumes should be interpolated for study intersections not included in the model.

City staff must approve alternative methods to develop future volumes such as general growth rates.

### 3.5. TRIP GENERATION

Trip generation should be based on one or more of the following:

- ▶ Institute of Transportation Engineers (ITE) Trip Generation Manual (most current edition), or recognized trip rates from professional organizations such as the Urban Land Institute.
  - Rates should be calculated using the average weight or weighted average formula when applicable
  - Special consideration should be given for ITE rates based on old data or a small sample and may require additional data collection to determine the appropriate trip generation
- ▶ New rates should be generated using community examples for uses not updated or included in the ITE Trip Generation Manual.
- ▶ Mixed-use trip reductions are allowed but must follow methods from approved sources such as ITE or NCHRP.
- ▶ Pass-by trip reductions must be justified from approved sources.
- ▶ All trip reductions may be capped by the City Engineer.
- ▶ All assumptions shall have proper citation and justification for their use in the local transportation analysis and must be approved by the City Engineer.

Projected daily and, AM and PM peak hour trips for the proposed project shall be summarized in the table. Trip generation rates, factors and source should be provided. The totals for the inbound and outbound trips shall be provided in the table.

### 3.6. TRIP DISTRIBUTION

Trip distribution should be developed, and project trips assigned to the study intersections using either existing travel patterns and relative locations of complementary land uses, or a City of San Mateo travel demand model select zone run (in consultation with City staff).

A figure illustrating the percentage of peak hour traffic going to and from various destinations along the transportation network shall be provided. A figure illustrating peak hour project only trips at the driveways, study intersections and roadway segments shall be provided based on the trip distribution.

### 3.7. OPERATIONS ANALYSIS METHODOLOGY

Existing, Existing Plus Project, Opening Year, Opening Year Plus Project, Cumulative, and Cumulative plus project intersection levels of service must be evaluated for all study intersections using the most recent edition of the Highway Capacity Manual (HCM) methodology.

### 3.8. LEVEL OF SERVICE STANDARDS

Level of service (LOS) is a standard performance measurement to describe the operating characteristics of a street system in terms of the level of congestion or delay experienced by motorists. Service levels range from A through F, which relate to traffic conditions from least

congested, (free-flowing conditions) to most congested (total breakdown with stop-and-go operations). The relationship between level of service and delay are described in the HCM.

### 3.8.1. Signalized Intersections

The performance standard for intersections in San Mateo is to maintain a Level of Service no worse than mid LOS D, average delay of 45.0 seconds, as the acceptable Level of Service for all signalized intersections within the City. The local transportation analysis should note intersections that perform unacceptably under no project and/or plus project conditions, and necessary improvements that can be applied to increase performance to acceptable levels per Policy C2.1 of the City's Circulation Element.

For study intersections, an adverse traffic operations issue is identified if the addition of the traffic generated from the proposed project results in any one of the following:

- ▶ Triggers an intersection operating at acceptable LOS to operate at unacceptable levels of service
- ▶ Increases the average delay for a study intersection that is already operating at unacceptable LOS by 4.0 seconds or more.

### 3.8.2. Unsignalized Intersections

Unsignalized intersections should maintain a Level of Service no worse than LOS E. For unsignalized study intersections, an adverse traffic operations issue is identified if the addition of the traffic generated from the proposed project results in any one of the following:

- ▶ Triggers an intersection operating at acceptable LOS to operate at unacceptable levels of service (from E or better to F).
- ▶ Increases the average delay for an unsignalized study intersection that is already operating at unacceptable LOS by 4.0 seconds or more.

Unsignalized intersections may include all way stop, or two way stop controlled. The delay for unsignalized intersections should be computed as follows:

- ▶ All way stop controlled – use average delay
- ▶ Two way stop controlled – use worst approach delay

Improvements to unsignalized intersections may include a change of traffic control, including yield control, traffic circle/roundabout, or a traffic signal. The CA MUTCD states that if one or more of the criteria for signal warrants is met, an engineering study is required to evaluate other factors to determine if an intersection must be signalized. When analyzed, the peak hour and 8-hour traffic signal warrants should be used to determine if a traffic signal is required to improve the adverse effects identified at an unsignalized intersection. Additionally, if a project is near a school or a downtown area with substantial pedestrian activity then City may require additional warrants to be

evaluated such as pedestrian, accident history, etc. The City reserves the right to determine if a warranted signal will be installed.

### 3.9. OTHER ANALYSIS REQUIREMENTS

In addition to LOS, the local transportation assessment must include the following analyses:

- **Site Access and On-Site Circulation:** Review site access and on-site circulation for vehicles, bicyclists, and pedestrians and identify any issues that should be improved.
- **Driveway Site Distance:** Analyze driveway sight distance for all signalized and unsignalized driveways and identify any deficiencies.
- **Parking:** Identify and compare the project's proposed parking supply, parking requirements, and expected peak parking demand (based on ITE parking rates). For mixed-use projects, examine the feasibility of shared parking. The bicycle parking supply will also be compared to code requirements (if applicable).
- **Vehicle Queuing:** Examine outbound vehicle queuing at project driveways and note any on-site deficiencies or conflicts with circulation. Also examine the adequacy of turn pocket storage length at off-site study intersections based on 95<sup>th</sup> percentile queues.
- **Pedestrian Issues:** Examine potential effects to pedestrian safety and accessibility for all existing and planned sidewalks, crosswalks, and other pedestrian facilities adjacent to the project site, within a quarter mile of the project site, or connecting to transit stops or stations in the vicinity of the project site. Per General Plan Policy C4.5 and C4.6 of the City's General Plan Circulation Element, the City requires as a condition of development project approval the provision of sidewalks and wheelchair ramps where lacking and the repair or replacement of damaged sidewalks.
- **Bicyclist Issues:** Examine potential effects to bicyclist safety and accessibility for all existing and planned bikeways and other bicycle facilities (including roadways) adjacent to the project site, within a quarter mile of the project site, or connecting to transit stops or stations in the vicinity of the project site.
- **Transit Issues:** Examine potential operational effects to transit routes and facilities and potential effects to transit user safety and accessibility for all existing and planned transit stops or stations adjacent to the project site or within a quarter mile of the project site.
- **Hazards and Emergency Vehicle Access:** Examine potential effects to safety/hazards and emergency vehicle access on-site and around the project site.
- **Neighborhood traffic:** If a project has direct access, or is located adjacent to a neighborhood street, a residential assessment should be conducted. Per General Plan Policy C1.3, the impact of new development on local streets must be minimized. A neighborhood traffic assessment must be conducted by estimating the number of project trips expected to travel on the neighborhood street segment on a daily basis and during the peak hour. Considerations will be based on roadway capacity, traffic speeds, presence of pedestrians, sidewalks, surrounding land use, among other factors. Project applicants will work with city

staff to determine whether traffic calming measures are necessary to reduce any adverse effects. The project applicant should generally expect to follow the neighborhood outreach efforts defined in the City's Neighborhood Traffic Management Program (NTMP) where traffic calming measures are proposed.

The project applicant should conduct any additional analysis that is deemed necessary by City staff, to be determined through a scoping meeting. This could include passenger loading demand analyses, freight loading demand analysis, and truck turning templates.

### 3.10. FAIR SHARE

In the City of San Mateo, transportation improvements are funded through direct project improvements and via contributions to development impact fee programs.

When adverse conditions are identified and off-site improvements are needed, the City of San Mateo as the lead agency may elect to collect a fair share contribution to construct necessary improvements. The fair share is one of the factors that are normally used by local agencies to estimate fees for covering the costs of constructing improvements. Identification and timing of needed improvements are determined by the local jurisdiction and are based on several factors, such as actual traffic volumes, specific site conditions and geometries, accident history, and community and engineering preferences.

Per the General Plan, sometimes the revenues derived from the fee offset only a small portion of the total costs of roadway improvements, and will be used primarily to pay for the less substantial mitigations. The percentage varies depending on the improvement. To make up the deficit, a development project may be required to pay the full cost of off-site traffic improvements through the environmental assessment process, in addition to paying the impact fee, with a possible provision for reimbursement by the City.

### 3.11. CROSS-JURISDICTIONAL ANALYSIS

If a project will affect another jurisdiction, such as Caltrans, C/CAG, County of San Mateo, or adjacent cities, coordination with that jurisdiction may be required. City of San Mateo staff can provide guidance and contact information for other jurisdictions.

### 3.12. ANALYSIS DISCUSSION

The local transportation analysis should discuss conclusions regarding the transportation issues caused by the proposed project on the roadway system. If the traffic generated by this and other projects requires improvement measures that are not covered by current impact fees, then the project's fair share percentage shall be calculated using peak-hour volumes and provided in the local transportation analysis.

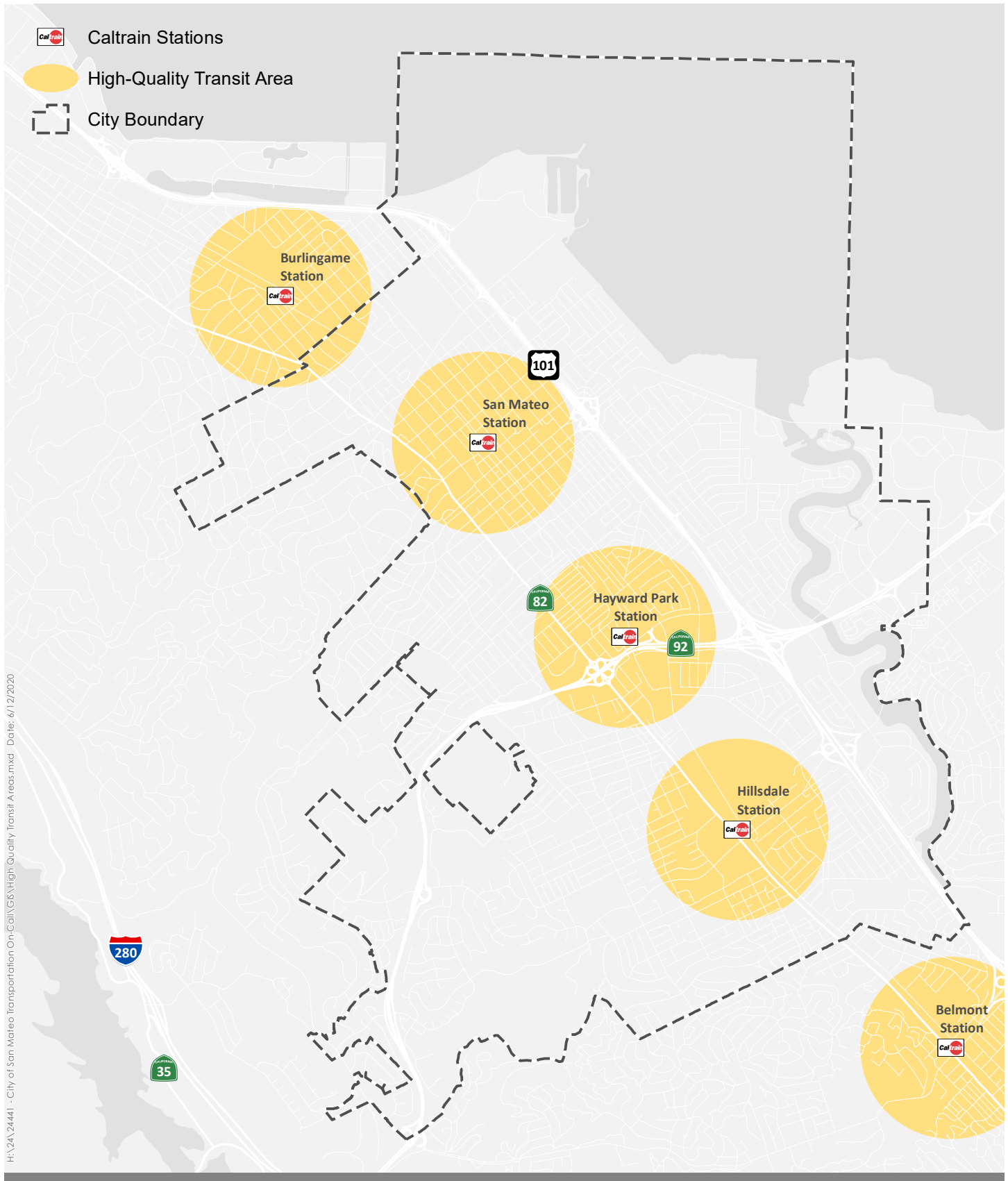
For all recommendations to increase the number of travel lanes on a street or at an intersection as an improvement measure, the report must clearly identify the adverse effects associated with such a change such as whether or not additional right of way will be required and whether it is feasible to acquire the right of way based on the level of development of the adjacent land and buildings (if any). All improvements should be reviewed in the field to make sure that they can be accommodated. If they cannot be accommodated or are not feasible, those findings need to be included in the local transportation analysis.

Any proposed roadway widening would need a review of the VMT impacts for transportation projects, as described above in the VMT Impact Thresholds. Any proposed improvements in response to local transportation analysis that results in increased capacity must undergo a detailed VMT analysis.

The local transportation analysis should discuss other possible adverse issues on traffic. Examples of these are: (1) the limited visibility of access points on curved roadways; (2) the need for pavement widening to provide left-turn and right-turn lanes at access points into the proposed project; (3) the effect of increased traffic volumes on local residential streets; and (4) the need for road realignment to improve sight distance.

Projects which propose to amend the City's General Plan Land Use and substantially increase potential traffic generation must provide an analysis of the project at current planned land use versus proposed land use in the build out condition for the project area, including future cumulative conditions. The purpose of such analysis is to provide decision makers with the understanding of the planned circulation networks ability to accommodate additional traffic generation caused by the proposed General Plan Land Use amendments.

## Attachment A: High Quality Transit Area Map



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High-quality transit areas are within 1/2 mile of an existing major transit stop or an existing stop along a high-quality transit corridor

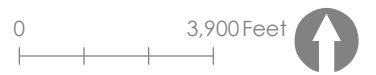


Figure 2

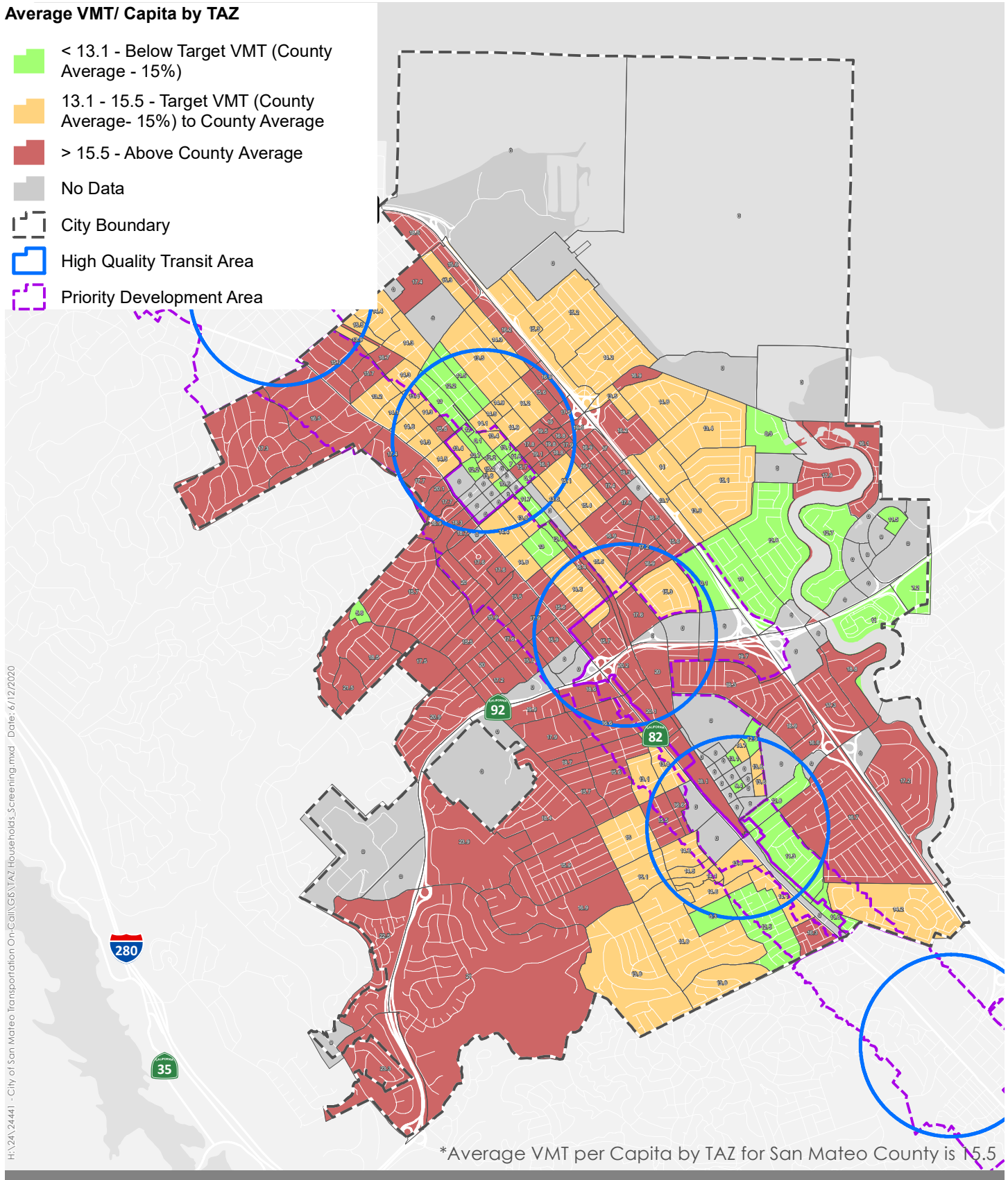


## Attachment B: VMT Screening Maps

## Average VMT/ Capita by TAZ

- < 13.1 - Below Target VMT (County Average - 15%)
- 13.1 - 15.5 - Target VMT (County Average- 15%) to County Average
- > 15.5 - Above County Average
- No Data
- City Boundary
- High Quality Transit Area
- Priority Development Area

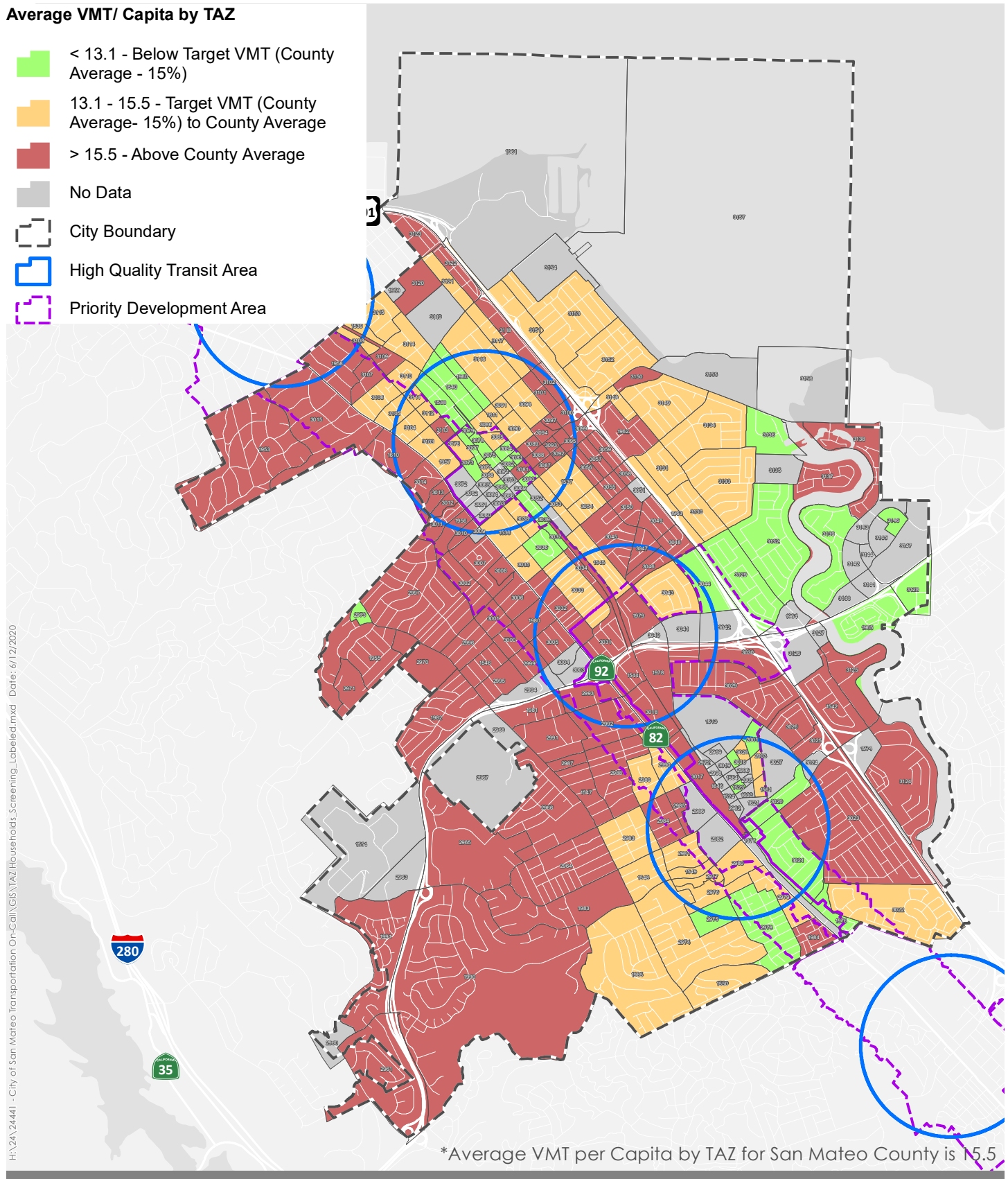
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## Average VMT/ Capita by TAZ

- < 13.1 - Below Target VMT (County Average - 15%)
- 13.1 - 15.5 - Target VMT (County Average- 15%) to County Average
- > 15.5 - Above County Average
- No Data
- City Boundary
- High Quality Transit Area
- Priority Development Area

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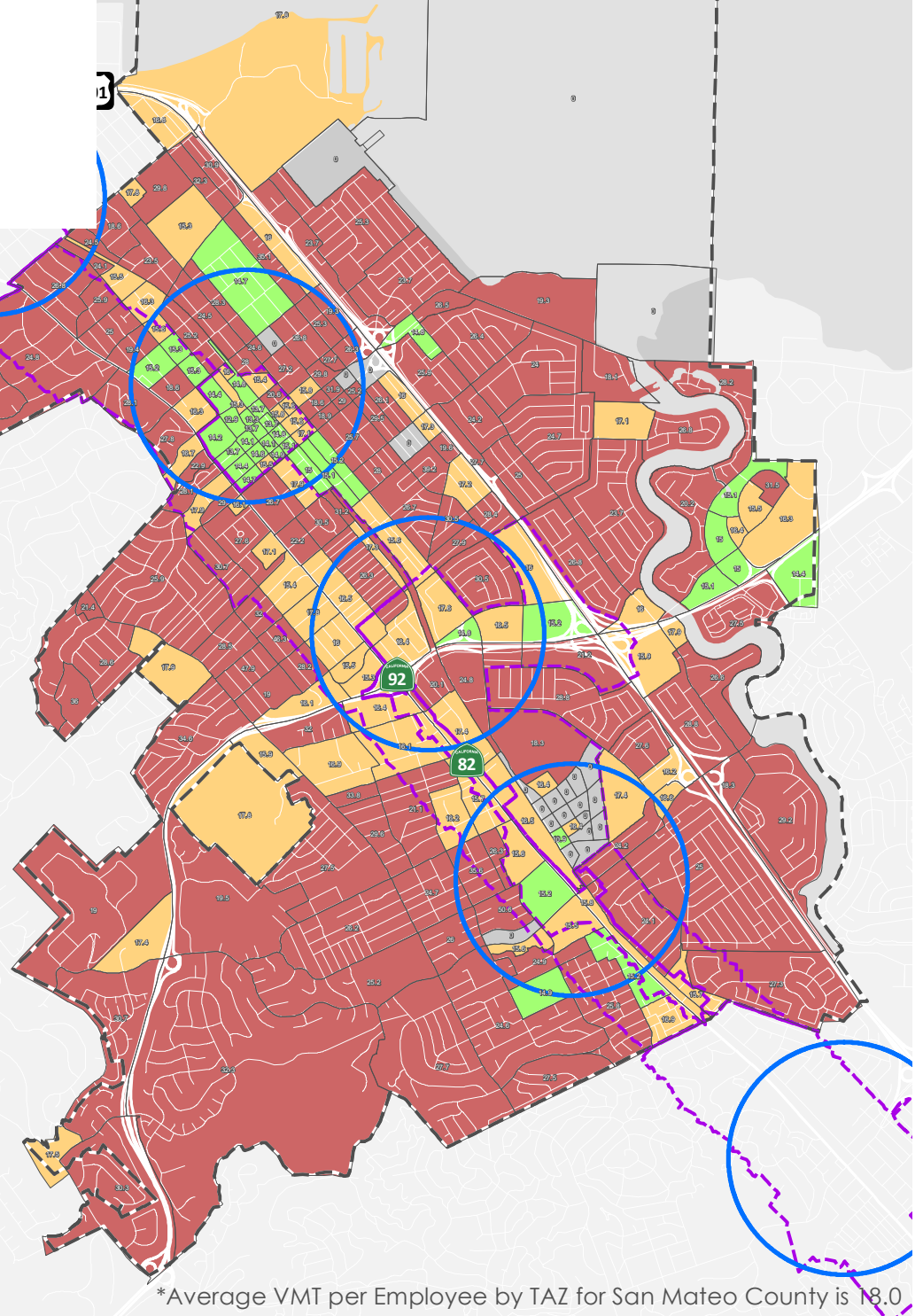


0 3,900 Feet

## Average VMT/ Employee by TAZ

- < 15.3 - Below Target VMT (County Average - 15%)
- 15.3 - 18.0 - Target VMT (County Average-15%) to County Average
- > 18.0 - Above County Average
- No Data
- City Boundary
- High Quality Transit Area
- Priority Development Area

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\*Average VMT per Employee by TAZ for San Mateo County is 18.0

0 3,900 Feet

**Average VMT per Employee by TAZ**  
**VMT per Employee Labeled**  
**City of San Mateo, CA**



# Average VMT/ Employee by TAZ

- < 15.3 - Below Target VMT (County Average - 15%)
- 15.3 - 18.0 - Target VMT (County Average- 15%) to County Average
- > 18.0 - Above County Average
- No Data
- City Boundary
- High Quality Transit Area
- Priority Development Area

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\*Average VMT per Employee by TAZ for San Mateo County is 18.0

0 3,900 Feet



**Average VMT per Employee by TAZ**  
**TAZ Number Labeled**  
**City of San Mateo, CA**

## Attachment C: Transportation Projects That Generally Do Not Increase VMT

- Rehabilitation, maintenance, replacement, safety, and repair projects designed to improve the condition of existing transportation assets (e.g., highways; roadways; bridges; culverts; Transportation Management System field elements such as cameras, message signs, detection, or signals; tunnels; transit systems; and assets that serve bicycle and pedestrian facilities) and that do not add additional motor vehicle capacity
- Roadside safety devices or hardware installation such as median barriers and guardrails
- Roadway shoulder enhancements to provide “breakdown space,” dedicated space for use only by transit vehicles, to provide bicycle access, or to otherwise improve safety, but which will not be used as automobile vehicle travel lanes
- Addition of an auxiliary lane of less than one mile in length designed to improve roadway safety
- Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, two-way left turn lanes, or emergency breakdown lanes that are not utilized as through lanes
- Addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for pedestrians, cyclists, and, if applicable, transit
- Conversion of existing general purpose lanes (including ramps) to managed lanes or transit lanes, or changing lane management in a manner that would not substantially increase vehicle travel
- Addition of a new lane that is permanently restricted to use only by transit vehicles
- Reduction in number of through lanes
- Grade separation to separate vehicles from rail, transit, pedestrians or bicycles, or to replace a lane in order to separate preferential vehicles (e.g., HOV, HOT, or trucks) from general vehicles

- Installation, removal, or reconfiguration of traffic control devices, including Transit Signal Priority (TSP) features
- Installation of traffic metering systems, detection systems, cameras, changeable message signs and other electronics designed to optimize vehicle, bicycle, or pedestrian flow
- Timing of signals to optimize vehicle, bicycle, or pedestrian flow
- Installation of roundabouts or traffic circles
- Installation or reconfiguration of traffic calming devices
- Adoption of or increase in tolls
- Addition of tolled lanes, where tolls are sufficient to mitigate VMT increase
- Initiation of new transit service
- Conversion of streets from one-way to two-way operation with no net increase in number of traffic lanes
- Removal or relocation of off-street or on-street parking spaces
- Adoption or modification of on-street parking or loading restrictions (including meters, time limits, accessible spaces, and preferential/reserved parking permit programs)
- Addition of traffic wayfinding signage
- Rehabilitation and maintenance projects that do not add motor vehicle capacity
- Addition of new or enhanced bike or pedestrian facilities on existing streets/highways or within existing public rights-of-way



- Addition of Class I bike paths, trails, multi-use paths, or other off-road facilities that serve non-motorized travel
- Installation of publicly available alternative fuel/charging infrastructure
- Addition of passing lanes, truck climbing lanes, or truck brake-check lanes in rural areas that do not increase overall vehicle capacity along the corridor