TRANSPORTATION IMPACT ANALYSIS GUIDELINES

City of Dublin, CA

DUBLIN
CALIFORNIA
THE NEW AMERICAN BACKYARD

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1. INTRODUCTION

This 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 Dublin (City). It is intended to:

- Promote conformance with applicable City and state regulations;
- Provide evaluation consistent with the California Environmental Quality Act (CEQA);
- 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. WHICH PROJECTS REQUIRE A TRANSPORTATION IMPACT ANALYSIS?

A Transportation Impact Analysis (TIA) prepared by a qualified consultant, working at the direction of the City, is required for most projects. For projects subject to CEQA, the TIA must include an evaluation that addresses the CEQA statute. In addition, the TIA must include a local operational evaluation. The level of analysis will vary based on the size, type and location of the project. A TIA for a simple project may include trip generation estimates, brief documentation of VMT for CEQA compliance, and a site plan review. More complex projects may require a detailed VMT analysis, and an intersection operations analysis documenting the project's effect on the local transportation infrastructure.

1.2. DEVELOPING THE SCOPE OF WORK

Table 1 shows the top-level elements to include in a scope of work. For all projects, a pre-application/transportation scoping meeting should be scheduled between City staff and the transportation consultant to address how these guidelines are applied to the proposed project. This is required for projects generating more than 50 trips in a peak hour. Following the scoping meeting, the transportation consultant should prepare a draft scoping memorandum for review and approval by City staff. Key items required in a scoping memorandum include:

- Identify travel demand model to be used if performing a detailed VMT analysis.
- Selected study intersections based on guidance provided in this document.
- Trip generation assumptions including any proposed reductions for pass-by, internal capture, and travel demand management.
- Trip distribution and assignment assumptions and brief justification.
- Proposed time periods for transportation counts.

- Proposed intersection analysis tool (Vistro, Synchro, etc.).
- Project vicinity maps showing traffic assignment, location of the project, and proposed study intersections.

Table 1: Typical Study Components

Topic	Subtopics	Passes CEQA Screen		Does Not Pass CEQA Screen	TIA Section
		<= 50 Peak Hour Trip Generation	> 50 Peak Hour Trip Generation		
Project Summary	Project Description	x	x	x	2.1
	Study Area Description	x	x	x	2.2
Local Transportation Analysis	Trip Generation	x	x	x	3.1
	Site Plan Review	x	x	x	3.2
	Operations Analysis		x	x	3.3
CEQA Transportation Analysis	Consistency with Plans	x	x	x	4.1
	CEQA VMT Screening	x	x	x	4.2
	Detailed VMT Analysis			x	4.3
	Mitigations (if applicable)			x	4.4

City staff will make reasonable, good faith efforts to review the draft scope within 10 business days of receipt and request revisions as needed.

2. PROJECT SUMMARY

All transportation impact analyses will include a project summary including a project description and a study area description.

2.1. PROJECT DESCRIPTION

All transportation impact analyses must include a project description with the following information:

- Site plan including address and cross streets.
- Existing and proposed total gross square footage for each land use type and number of residential units and hotels rooms.

2.2. STUDY AREA DESCRIPTION

The transportation review should provide a brief but complete description of existing transportation infrastructure and conditions in the vicinity of the project. The study area selected

and covered in this description must be justified such that the reasoning can be easily understood. Key elements include but are not limited to:

- Roadway description of key roadways in the study area including:
  - Number and width of lanes;
  - Average daily traffic volumes (where known from studies performed within the past three years);
  - Traffic calming devices (e.g., traffic circles, bulb-outs and speed bumps),
  - Sidewalk characteristics;
  - Presence of bicycle facilities; and
  - On-street parking.
- Map showing current transit routes in the study area and the closest transit stop to the project.
- Map showing existing and proposed bicycle facilities in the study area.
- If the project is anticipated to generate truck traffic, a map of existing truck routes in the study area.

3. LOCAL TRANSPORTATION ANALYSIS

A local transportation analysis is required for development projects to evaluate potential impacts on the circulation network, primarily on local access and circulation in the proximity of a project site. This analysis is required for conditions of approval and is outside the CEQA review process. Traffic impacts caused by a development project are considered to be unacceptable and warrant improvements if the addition of project traffic results in intersection level of service exceeding the acceptable level established in the General Plan[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 development project, as well as site access and internal circulation.

The level of local transportation analysis is dependent on the proposed project. Project's generating less than 50 vehicle trips during a peak hour are only required to submit trip generation and distribution documentation. Projects larger than 50 trips must also include operational analyses at the identified study locations.

[1] The City strives to phase development and roadway improvements so that the operating Level of Service (LOS) for intersections in Dublin does not exceed LOS D. However, intersections within the Downtown Dublin Specific Plan area (including the intersections of Dublin Boulevard/San Ramon Road and Village Parkway/Interstate 680 on-ramp) are excluded from this requirement and may operate at LOS E or worse as long as the safety for pedestrians and bicyclists is maintained and impacts to transit travel speeds are minimized .

3.1. TRIP GENERATION AND DISTRIBUTION DOCUMENTATION

Trip generation and distribution documentation must be provided for all projects proposed for development in Dublin. Details of the requirements for this documentation are described in this section.

3.1.1. Identification of Potential Study Locations

The first step in the trip generation and distribution documentation is to identify potential locations where the project may affect the transportation infrastructure. At a minimum, signalized and unsignalized intersections that fall into the following categories should be identified:

- Project driveways
- All intersections of streets adjacent to the project site
- Major intersections of collector or higher classified streets where the project traffic could significantly affect operations

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

3.1.2. 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)
  - When the land use has a limited number of studies to support the trip generation rates or when the Coefficient of Determination (R^2) is below 0.75, consultation with the City and those preparing the analysis is recommended.
- Local trip generation rates are acceptable if appropriate validation is provided to support them.
- Mixed-use trip reductions are allowed but must follow methods from approved sources such as ITE or NCHRP.
- Pass-by trip[2] reductions must be justified from approved sources and are only considered for retail-oriented development. Determination of pass-by trips will be based on the ITE procedures and will be approved by the City's Traffic Engineer. The justification for exceeding a five percent reduction should be discussed in the documentation.

[2] Pass-By - Traffic already on the way from an origin to a primary trip destination that will make an intermediate stop at the site being studied without a route diversion.

- Internal capture[3] trip reductions are allowed and will be based on the ITE procedures and will be approved by the City's Traffic Engineer. The justification for exceeding a five percent reduction should be discussed in the documentation.
- Diverted[4] trips require consultation with the City.
- All trip reductions may be capped by the City Traffic 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 a table. Trip generation rates, factors and source should be provided. The totals for the inbound and outbound trips shall be provided in the table.

3.1.3. 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 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 study intersections (including project driveways) shall be provided based on the trip distribution.

3.2. SITE PLAN REVIEW

A site plan review is required for all development projects and as requested by the City Traffic Engineer. It is essential to have a transportation professional review the proposed site plan and make recommendations on how site circulation and access for all modes can be improved. Key elements of a site plan review that need to be discussed include:

- Vehicle Parking – Identify and compare the project's:
  - Proposed parking supply;
  - Parking requirements from the Dublin Municipal Code (DMC) (including ADA requirements);
  - Bicycle parking supply will also be compared to code requirements; and
  - Parking stall depth and length in relation to code requirements.

[3] Internal Capture - Traffic associated with multi-use developments where trips among various land uses can be made on the site being studied without using the major street system. These trips can be made either by walking or by vehicles using internal roadways

[4] Diverted - Traffic attracted to the site being studied from adjacent facilities without direct access to the site. A diverted trip example is a through trip on a freeway that diverts to an exit and a development, adding traffic to the local road but removing traffic from the freeway.

- Bicycle Parking – Identify and compare the project's short-term and long-term bicycle parking against requirements in the DMC. (This is per Green Building code and if any requirements that are/may be proposed in Bicycle and Pedestrian Master Plan). The location of the bicycle parking on the site and its accessibility should also be assessed.
- Vehicle Site Circulation – Identify any potential vehicle conflict points when accessing or circulating within the site.
- Pedestrian and Bicycle Site Circulation – Identify any potential pedestrian and bicycle conflict points accessing or circulating within the site. Pedestrian routes between the project and the closest bus stop should also be assessed to determine if adequate pedestrian facilities are provided.
- Large Vehicle Site Circulation – Create turn templates showing site access and circulation for the largest of either emergency, garbage, service, or delivery vehicles.
- Drop Off and Loading Zones – Evaluate the adequacy of drop off or loading zones as applicable to the project.
- Sight Distance – Review the available sight distance at the proposed project access points. This review should include visibility triangles on landscape plans.

Attachment E provides a high-level checklist of items to consider when reviewing site plans.

3.3. OPERATIONS ANALYSIS

Projects anticipated to generate more than 50 vehicle trips in the peak hour are required to perform an operations analysis of access points to a project site and at key intersections where traffic created by a project may affect operations. This operations analysis is in addition to the trip generation and distribution documentation and the site plan review. The requirements of this operations analysis are included in this section.

3.3.1. 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 two years 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 Traffic Engineer or their 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 shall be collected for all study intersections for the weekday AM and weekday PM periods, or unless otherwise specified (such as midday or weekend peak periods). To eliminate unnecessary analysis, consultation between the City, and those preparing the TIA is required during the early planning stages of a project to determine the exact time periods for data collection.

3.3.2. 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 (based on the current cumulative year travel demand model)

- Cumulative Plus Project Conditions (project-generated traffic added to cumulative traffic volumes)

For projects anticipated to be completed in phases, an interim year analysis for the opening of each phase may be required. Please consult with the City Traffic Engineer for determination of interim years if the project is phased.

3.3.3. Future Traffic Volume Forecasting Methodology

The local or regional travel demand model should reflect the most current land use and planned improvements (i.e., where programming or funding is secured). When a general plan build-out model is not available, the closest forecast model year to build-out should be used. Any changes made to the model to accommodate the proposed project should be clearly identified in the TIA.

If a travel demand model is not available, historical growth rates and current trends can be used to project future traffic volumes. City staff must approve alternative methods to develop future volumes such as general growth rates.

3.3.4. Operations Analysis Methodology

Existing, 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. The analysis software used to implement the HCM (Vistro, Synchro, HCS, etc.) should be verified with the City prior to beginning the analysis.

3.3.5. 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.

The performance standard[5] for intersections in Dublin is to maintain no worse than LOS D as the acceptable for most signalized intersections within the City. Intersections within the Downtown Dublin Specific Plan area (including the intersections of Dublin Boulevard/San Ramon Road and Village Parkway/Interstate 680 on-ramp) may operate at LOS E or worse as long as the safety for pedestrians and bicyclists is maintained and negative effects to transit travel speeds are minimized .

[5] City of Dublin General Plan Section 5.2.2

3.3.5.1. Signalized Intersections

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. For signalized 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:

- At a study, signalized intersection which is located outside the Downtown Dublin Specific Plan area, the project would cause the motor vehicle LOS to degrade to worse than LOS D (i.e., LOS E or F);
- At a study, signalized intersection which is located within the Downtown Dublin Specific Plan area, the project would cause the motor vehicle (LOS to degrade to worse than LOS E (i.e., LOS F);
- At a study, signalized intersection which is located outside the Downtown Dublin Specific Plan area where the motor vehicle level of service is LOS E, the project would cause the total intersection average vehicle delay to increase by six (6) seconds or more; or
- At a study, signalized intersection for all areas where the level of service is LOS F, the project would cause: (a) the overall volume-to-capacity (V/C) ratio to increase 0.03 or more; or (b) the critical movement V/C ration to increase by 0.05 or more.
- For intersections located along routes of regional significance, the Tri-Valley Transportation Plan and Action Plan identifies LOS E or better as the standard for the Multimodal Transportation Service Objective (MTSO) related to intersection LOS.

3.3.5.2. Unsignalized Intersections

Unsignalized intersections should maintain no worse than LOS E in the Downtown Dublin Specific Plan area and LOS D for all other areas. 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:

- At a study, unsignalized intersection which is located outside the Downtown Dublin Specific Plan area, the project would cause the motor vehicle LOS to degrade to worse than LOS D (i.e., LOS E or F) and after project completion satisfy the California Manual on Uniform Traffic Control Devices (MUTCD) peak hour traffic signal warrant;
- At a study, unsignalized intersection which is located within the Downtown Dublin Specific Plan area, the project would cause the motor vehicle LOS to degrade to worse than LOS E (i.e., LOS F) and after project completion satisfy the California Manual on Uniform Traffic Control Devices (MUTCD) peak hour traffic signal warrant; or
- At a study, unsignalized intersection where the motor vehicle level of service is operating below the LOS threshold, the project would add ten (10) or more vehicles to the critical movement and after project completion satisfy the California Manual on Uniform Traffic Control Devices (MUTCD) peak hour traffic signal warrant.

Unsignalized intersections includes all way stop, two way stop, and roundabout controlled intersections. The delay for unsignalized intersections should be computed as follows:

- All-Way Stop and Roundabout Controlled – use overall intersection 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 City reserves the right to determine if a warranted signal will be installed.

3.3.6. Other Analysis Requirements

In addition to LOS, the local transportation assessment must include the following analyses and recommendations for improvement:

- **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 95th percentile queues.
- **Pedestrian Circulation**: 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. A determination should also be made whether the project conflicts with adopted policies, plans, or programs supporting pedestrian circulation.
- **Bicyclist Circulation**: 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. A determination should also be made whether the project conflicts or creates inconsistencies with adopted bicycle system plans, guidelines, policies or standards; or a project fails to provide on-site parking for bicycles as required by the City's municipal code.
- **Transit Circulation**: 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.
- **Consistency with Complete Street and Traffic Safety Policies**: Determine if the Project conflicts with the City's Complete Street or Traffic Safety Policies.
- **Metropolitan Transportation Service Objectives (MTSOs)**: The Tri-Valley Transportation Council (TVTC) has defined MTSOs that define quality of service that is desired for routes of regional significance. Projects affecting routes of regional significance must also perform an analysis of applicable MTSOs per the latest Tri-Valley Transportation Plan and Action Plan for Routes of Regional Significance.

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 and freight loading demand analysis.

3.3.7. Cross-Jurisdictional Analysis

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

3.3.8. 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 the VMT Impact Thresholds section (Section 4.3.4). Any proposed improvements in response to local transportation analysis that results in increased capacity must undergo a detailed VMT analysis (Section 4.3).

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 a General Plan land use designation 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 a General Plan Amendment.

4. CEQA TRANSPORTATION ANALYSIS

This section discusses the requirements for conducting analyses for projects that are subject to CEQA, consistent with requirements of 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.

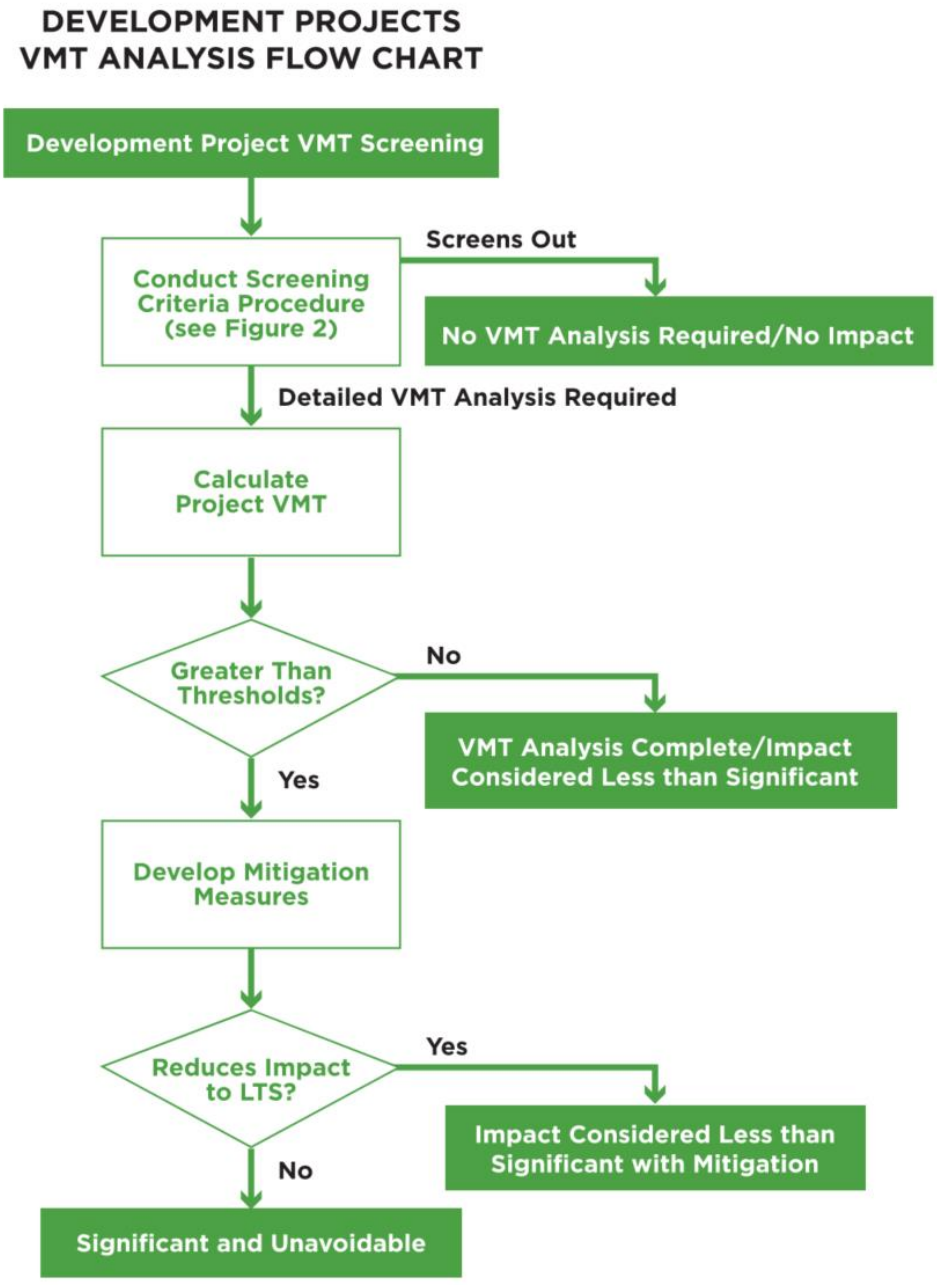
Appendix G (Environmental Checklist Form) of the CEQA Guidelines identifies the following four questions for the assessment of transportation impacts:

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 CEQA Guidelines Section 15064.3, the City of Dublin has established thresholds of significance to determine when a project will have a significant transportation impact based on VMT. The City has also established screening criteria to streamline the analysis for projects that meet certain criteria, referred to as *project screening*.

Figure 1 presents a flow chart depicting how a development project would be analyzed under VMT-based metrics.

Figure 1: Development Project VMT Analysis Flow Chart



4.1. CONSISTENCY WITH ADOPTED PLANS

Dublin's adopted plans shape the framework for transportation planning in the City. These plans should be consulted for all projects to determine if the project elements are consistent or conflict with Dublin's vision of a safe and efficient transportation system. The names of major plans in Dublin along with their weblinks include:

- General Plan Land Use and Circulation Element
  - https://dublin.ca.gov/171/General-Plan
- Bicycle and Pedestrian Master Plan
  - https://dublin.ca.gov/DocumentCenter/View/7738/Bike-and-Ped-Plan-and-Guidelines-1?bidId=
- Downtown Dublin Specific Plan
  - https://dublin.ca.gov/DocumentCenter/View/7859/Amended_DDSP_Dec_2019?bidId=
- Dublin Village Historic Area Specific Plan
  - https://dublin.ca.gov/DocumentCenter/View/7780/DVHASP-FULL-PDF-10714?bidId=
- Eastern Dublin Specific Plan
  - https://dublin.ca.gov/DocumentCenter/View/7776/EDSP-2016-Update-Full-PDF?bidId=
- Dublin Crossing Specific Plan
  - https://dublin.ca.gov/DocumentCenter/View/14502/Dublin-Crossing-SP-2017?bidId=
- Downtown Dublin Streetscape Plan
  - https://dublin.ca.gov/1945/Downtown-Dublin-Streetscape-Plan

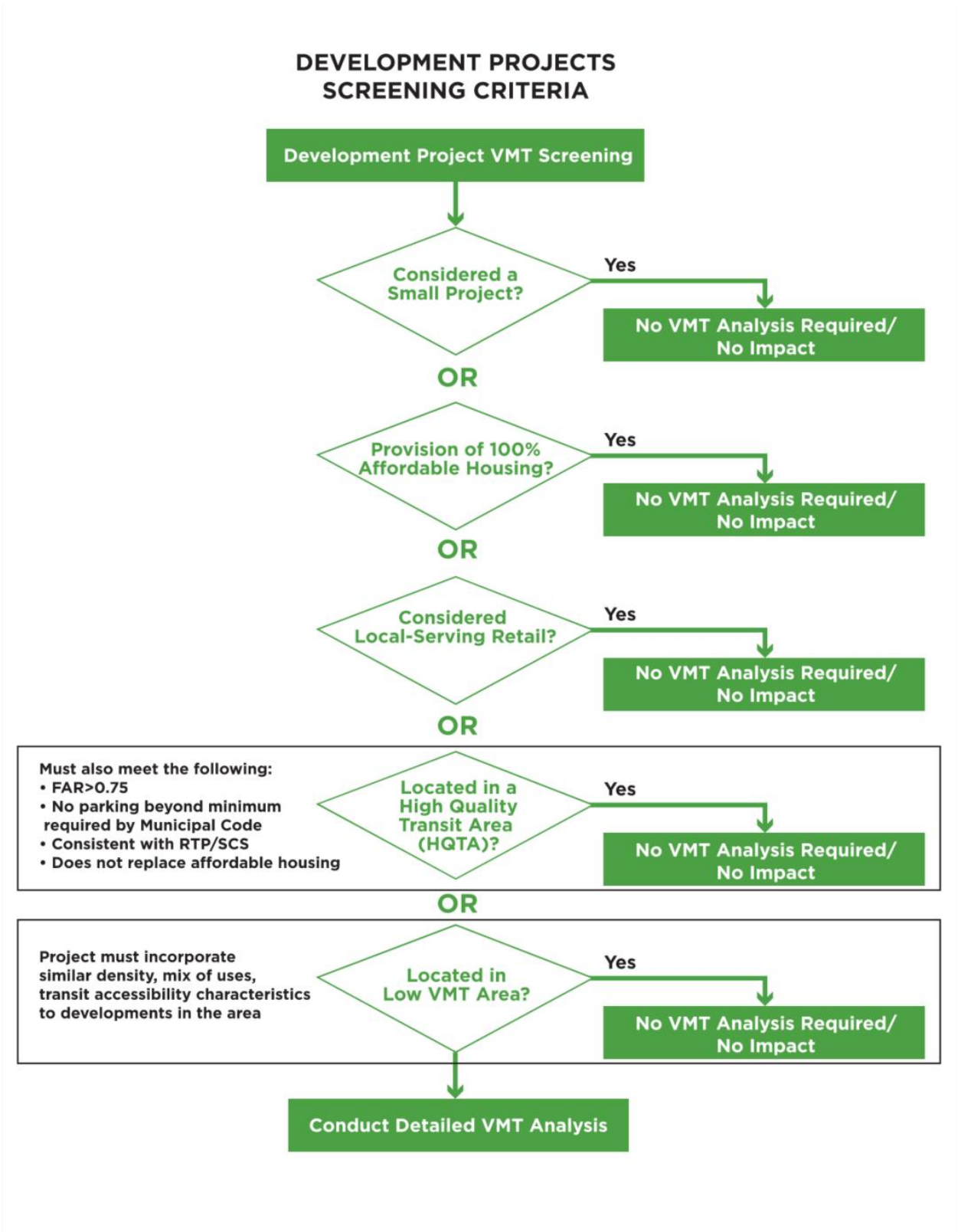
4.2. VMT SCREENING

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 and public services
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 development project would be analyzed under the proposed screening criteria. A project that meets at least one of the screening criteria is assumed to have a less than significant VMT impact due to project or location characteristics. Projects that meet one or more of these screening criteria should document the findings in a letter or memorandum and submit it to the City for review and approval. Ultimate determination of whether a project screens out under one of these criteria rests with the City's Public Works Director or designee.

Figure 2 - Development Projects Screening Criteria Flow Chart



4.2.1. Small Projects

Projects that generate or attract fewer than 110 vehicle trips per day are presumed to have a less than significant transportation impact. Examples of projects that typically generate 110 daily vehicle trips per day or less are shown in Table 2.

Table 2: Small Projects Examples (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 from the ITE Trip Generation Manual 10th Edition.

4.2.2. Affordable Housing

Residential projects with 100 percent deed restricted affordable housing are presumed to have a less than significant transportation impact. 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 for-sale and rental housing projects located anywhere in the City.

4.2.3. Local Serving Retail and Public Services

Retail projects that are locally serving are presumed to have a less than significant transportation impact. 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.

Projects proposing to screen out of a detailed VMT analysis due to being local-serving retail will need to document how the project meets the characteristics of a neighboring retail development based on the goods and services provided. The City may also require an economic market analysis to demonstrate the project is local serving based on goods and services provided relative to the geographic location, customer base, and other nearby retail uses. Final determination of whether the retail is local serving will be made by the City of Dublin Public Works Director or designee

Public services (e.g., police, fire stations, public utilities, neighborhood parks, public schools) generally do not increase 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 transportation 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. Additionally, charter and private schools typically draw students from a much larger geographic area than public schools and would not screen out of a detailed VMT analysis under this criterion.

4.2.4. High-Quality Transit Area (HQTA)

HQTAs are areas located within one-half mile of an existing major transit stop[6] or an existing stop along a high-quality transit corridor.[7] A project is considered to be within one-half mile of a major transit stop or high-quality transit corridor if all parcels within the project have no more than 25 percent of their area farther than one-half mile from the stop or corridor and if not more than 10 percent of the residential units or 100 units (whichever is lower) in the project are farther than one-half mile from the stop or corridor.

The City has two major transit stops that qualify including the West Dublin and the Dublin/Pleasanton BART Stations. Attachment A shows the two BART stations and the one-half mile area where projects would screen out of a detailed VMT analysis. The City may also have high quality transit corridors, especially within Priority Development Areas, that have bus service at 15-minute headways or less. If a project is proposing to screen out because it is along one of these high-quality bus lines, the TIA should document the route/s and service headways to confirm location in an HQTA.

The presumption to exempt a project from a detailed VMT analysis under this screening criterion 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.

[6] Per Pubic Resources Code, § 21064.3 ("'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.").

[7] Per Public Resources Code, § 21155, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

4.2.5. 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 transportation impact and, thus, can be screened out. Attachment B shows the location of low VMT areas in green where projects may be screened out of a detailed VMT analysis using this criteria:

- Residential projects proposed in TAZs with total daily resident based VMT per capita that is 15 percent less than the existing average baseline level for Planning Area 4.
- Office or the employment portions of other non-residential uses with total daily employee based VMT per employee that is 15 percent less than the existing average baseline level for Planning Area 4.

This screening criterion is only applicable for projects that are substantially similar to the surrounding land uses in the project area. If the proposed project is an office project while surrounding land uses are light industrial for example, the project would likely have different trip length per employee than the surrounding land uses. Therefore, the fact it is in a low VMT area for light industrial does not mean an office project would have similarly low VMT and a detailed VMT analysis may be needed.

4.2.6. 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 may not qualify for screening out of a detailed VMT analysis.

4.3. DETAILED VMT ANALYSIS

Projects that do not meet the screening criteria must include a detailed evaluation of the VMT generated by the project. The level of significance of the project on VMT will be assessed by comparing the project VMT to the VMT thresholds established by the City.

The City has established three VMT metrics for assessing impacts. These metrics include the VMT per capita, VMT per employee, and total VMT. The application of these metrics to development projects includes:

- VMT per capita is used to assess residential projects and 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).
- VMT per employee is used to assess projects providing employment in non-retail settings and 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.

- Total VMT is used to assess retail and other similar projects by estimating the change in the overall VMT for the region with and without the project.

4.3.1. Efficiency Metrics (VMT per Capita and VMT 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 determined using the latest screening maps (Attachment B) and the TAZ (or TAZs) containing the project site if the project land use is similar to surrounding land uses.
- If the value for the TAZ is zero 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 if they are similar land uses to the proposed Project.
- The VMT/capita or VMT/employee may also be directly calculated using data about number of residents or employees, mode share, and average trip length.

4.3.2. Total VMT

For development projects that use total VMT to determine impacts (such as retail), total VMT may be calculated using the travel model specified by the City 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 travel demand 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 travel demand model be rerun to include the proposed project. The total regional VMT calculated from the model would then be compared with and without the project.

4.3.3. Exclusion of Truck VMT

SB 743 does not apply to goods movement (i.e., trucks). CEQA Guidelines Section 15064.3 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 and, 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,

greenhouse gas (GHG), noise and energy impact analyses to be evaluated in non-transportation parts of the environmental analysis.

4.3.4. Thresholds of Significance

The City has established the following thresholds of significance for development projects:

- **Residential Projects:** A significant impact occurs if a Proposed Project VMT/capita is greater than 15 percent below the existing Planning Area 4.
- **Office Projects:** A significant impact occurs if a Proposed Project VMT/employee is greater than 15 percent below the existing Planning Area 4 average.
- **Retail Projects:** A significant impact occurs if a Proposed Project causes a net increase in total VMT. The total VMT for Planning Area 4 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.
- **Other Development Projects:** 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. Generally, these projects will be analyzed based on how similar they are to residential, office, and retail projects.
    - Student housing and senior housing land uses for example should be treated as residential for screening and detailed VMT analysis.
    - Research and development, industrial, medical offices, and hospital projects may be evaluated as office projects using the VMT/employee metric.
    - Projects such as hotels, private schools, religious institutions, and regional parks, should be treated as retail for detailed VMT analysis.
- **Mixed-Use Projects:** Evaluate each component of a mixed-use project independently and apply the significance threshold for each land use type. Alternatively, the evaluation would apply only to the project's dominant use if it generates 80 percent of the total daily trips.

Since VMT threshold values may change over time as updated traffic models or new ABAG land uses are adopted, verify with the City the most current thresholds for each land use type prior to performing an analysis.

4.3.5. Redevelopment Projects

If a project replaces existing uses and the project results in similar or 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. 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.

4.3.6. Land Use Plans

For land use plans such as specific plans, community plans, and general plan updates, the City requires comparing the applicable VMT thresholds (such as VMT per capita and/or VMT per employee) under existing conditions with the applicable VMT metrics for the expected horizon year for the land use plan. If there is a net increase in the applicable VMT metrics under horizon year conditions, then there may be a potentially significant impact. The VMT calculations should be conducted for the plan area (in the case of the General Plan, all trips originating or ending in the City) using the most current travel demand model (Alameda Countywide or City of Dublin).

4.3.7. Cumulative Impacts

Per CEQA Guidelines Section 15064(h)(1), "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.

4.3.7.1. VMT per Capita or per Employee

For land uses evaluated under an efficiency metric (VMT/capita or VMT/employee), a project falling below the threshold under existing conditions 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.

4.3.7.2. Total VMT

For land uses evaluated using total VMT (retail, hotels, etc.), a cumulative VMT analysis should be assessed to ensure that future travel and VMT patterns are taken into account. A cumulative impact for total VMT would occur if the project causes the total VMT in the region to increase similar to the existing conditions analysis.

4.4. 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 transportation demand management (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 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 GHG 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. Alameda County also has a VMT Reduction Calculator for use in all cities in Alameda County including Dublin.

Projects for which impacts are determined to be significant are required develop a TDM plan to propose a list of VMT reduction measures and document the associated percent reduction in VMT. Project VMT with the proposed reduction is then compared to the threshold of significance to evaluate the project's transportation impact. The City will review and approve the proposed mitigation and the calculated VMT percentage reductions. A mitigation monitoring program may be required by the City to ensure the TDM plan is able to meet the required VMT reduction.

4.5. TRANSPORTATION PROJECTS

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

4.5.1. Determining Need for Detailed VMT Analysis

The City of Dublin 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) 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 or parking spaces
- Addition of non-motorized, transit, and active transportation facilities.

These projects generally do not increase capacity enough to result in an impact to 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.

4.5.2. VMT Analysis for General Plan or RTP/SCS Projects

For transportation 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.

4.5.3. 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 requires 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 is required using the following formula:

[% increase in lane miles] x [existing VMT] x [elasticity] = [VMT resulting from the project]

A National Center for Sustainable Transportation[8] tool can be used to determine the elasticity.

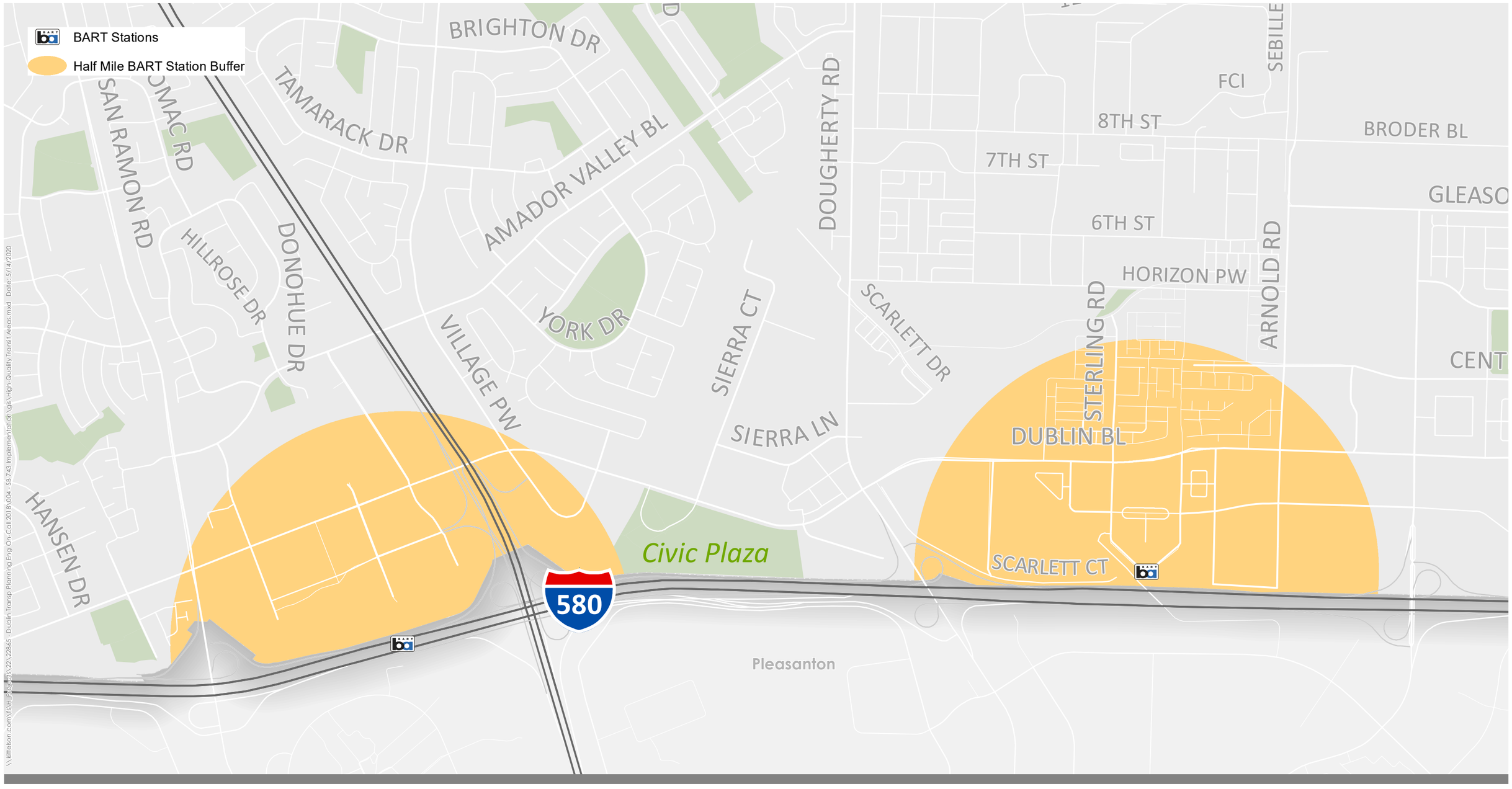
The City requires total VMT in the City as the appropriate VMT metric, with the impact threshold being any increase in total VMT. The analysis should be performed for the long-range horizon year, normally 20 years out. This approach would discourage induced demand impacts by requiring that a baseline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

4.5.4. 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. Potential mitigation measures for transportation projects may include implementing or funding off-site travel demand management programs to incentivize carpooling or implementing Intelligent Transportation Systems (ITS) strategies that improve passenger throughput rather than vehicle throughput on existing lanes.

[8] https://ncst.ucdavis.edu/research/tools

Attachment A: High Quality Transit Area Map



0 1 Mile

Figure 1

High-Quality Transit Areas
Dublin, California

DUBLIN
CALIFORNIA

KITTELSON & ASSOCIATES

Attachment B: VMT Screening Maps

Legend

- No VMT Generated
- <25.9 - Below Target VMT (Planning Area 4 Average - 15%)
- 25.9 - 30.5 - Target VMT (Planning Area - 15%) to Planning Area 4 Average
- >30.5 - Above Planning Area 4 Average
- Priority Development Area (PDA)
- Dublin City Limits

Alameda County
Contra Costa County
Pleasanton
Livermore
Dougherty Hills Open Space
Civic Plaza
Emerald Glen Park
Fallon Sports Park
680
580
DUBLIN BL
SCHAEFER RANCH RD
TASSAJARA RD
FALLON RD
DOUGHERTY RD
HACIENDA DR
HANSEN DR
SILVERGATE DR
SAN RAMON RD
TAMARACK DR
BRIGHTON DR
AMADOR VALLEY BL
STAGECOACH RD
BANDON DR
BAYSONA DR
INSPIRATION CI
INSPIRATION DR
DONOHUE DR
WILLOW PW
YORK DR
SIERRA CT
SIERRA LN
SCARLETT CT
SCARLETT DR
STERLING RD
ARNOLD RD
DUBLIN BL
HORIZON PW
CENTRAL PW
MANON DR
GLEASON DR
BRODER BL
7TH ST
6TH ST
12TH ST
FCI
SEBILLE RD
BARNET BL
MARDEN WY
KEEGAN ST
LOCKHART ST
CROAK RD
NORTHSIDE DR
COLLIER CANYON RD
CREEKSIDE DR
TOWER RD
RANGE RD
CROMWELL AV
EAGLE RD
CREEKVIEW DR
HILLTOP DR
ALBROOK DR
PALISADES DR
STORM DR
DUBLIN RANCH DR
ARNOLD DR

0 1 Mile

DUBLIN CALIFORNIA

KITTELSON & ASSOCIATES

Residential VMT (VMT per Capita)
Dublin, California

H:\22\22865 - Dublin Transp Planning Eng On-Call 2018\0004 - 497248 Implementation\gis\Fig8_VMT Per Capita TAZ_PA4.mxd Date: 10/15/2020

Legend

- No VMT Generated
- <12.9 - Below Target VMT (Planning Area 4 Average - 15%)
- 12.9 - 15.2 - Target VMT (Planning Area 4 - 15% to Planning Area 4 Average)
- > 15.2 - Above Planning Area 4 Average
- Priority Development Area (PDA)
- Dublin City Limits

Contra Costa County

Alameda County

Pleasanton

Livermore

Dougherty Hills Open Space

Civic Plaza

Emerald Glen Park

Fallon Sports Park

0 1 Mile

DUBLIN CALIFORNIA

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Employment VMT (VMT per Employee)
Dublin, California

H:\22\22865 - Dublin Transp Planning Eng On-Call 2018\004 - 2020 GHG Implementation\gis\Fig9_VMT Per Employee fAZ_PA4.mxd Date: 10/15/2020

Attachment C: Transportation Projects That Generally Do Not Increase VMT

Transportation Projects Generally Not Requiring Induced Travel Analysis[9]

Projects that would not likely lead to a substantial or measurable increase in vehicle travel, and therefore generally should not require an induced travel analysis, include:

- 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

[9] California Office of Planning and Research, Technical Advisory on Evaluating Transportation Impacts in CEQA, December 2018.

- 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

Attachment D: Minimum Contents of a Transportation Impact Analysis Report

MINIMUM CONTENTS OF TRAFFIC IMPACT STUDY REPORT

I. EXECUTIVE SUMMARY

II. TABLE OF CONTENTS
- A. List of Figures
- B. List of Tables

III. PROJECT SUMMARY
- A. Description of the proposed project
- B. Study Area Description
- C. Site plan including all access points to streets (site plan, map)
- D. Vicinity map showing all modes of transportation in the study area
- E. Land use and zoning
- F. Phasing plan including proposed dates of project (phase) completion
- G. Project sponsor and contact person(s)

IV. LOCAL TRANSPORTATION ANALYSIS
- A. Trip Generation and Distribution
- B. Operations Analysis[10]
  - Existing Conditions
  - Opening Year Conditions With/Without Project
  - Cumulative Conditions With/Without Project
  - 95th Percentile Queues for All Scenarios With/Without Project
- C. Site Plan Review

V. CEQA ANALYSIS
- A. Consistency with Adopted Plans
- B. VMT Analysis[11]
  - VMT Screening
  - Detailed VMT Analysis
- C. Proposed Mitigations (if applicable)

[10] An operations analysis is only required for projects generating more than 50 peak hour vehicle trips.

[11] Projects that screen out of a detailed VMT analysis only need to present documentation of screening out. Otherwise, this section should include an overview of the methodology and findings of a detailed VMT analysis.

VI. CONCLUSIONS AND RECOMMENDATIONS

VII. APPENDICES

A. Collected Multimodal Counts

B. Worksheets Used in Analysis (i.e., signal warrant, LOS data and analysis sheets, etc.)

C. Provide electronic analysis files (Synchro, Vistro, etc.) to the City.

Attachment E: Site Plan Review Checklist

SITE PLAN REVIEW CHECKLIST

Parking

- ☐ Verify vehicle parking supply meets municipal code requirements. (8.76.080)
- ☐ Compact car space substitution does not exceed threshold (8.76.050.A)
- ☐ Motorcycle space substitution does not exceed threshold (8.76.050.B)
- ☐ Parking aisles meets or exceeds minimums (8.76.070.A.7)
- ☐ Parking stall width and depth meets or exceeds minimums (8.76.070.A.7)
- ☐ Project provides sufficient disabled accessible parking in the correct location (8.76.070.A.8)
- ☐ Project provides sufficient loading spaces (8.76.090) and when provided, meet the standards (8.76.070.B)
- ☐ Bicycle parking confirms with California Green Building Standards Code (8.76.070.A.2)

Vehicle Circulation

- ☐ Project driveways meet minimum width requirements (8.76.070.A.11)
- ☐ Project driveways provide adequate sight distance for vehicles exiting.
- ☐ Site plan has eliminated vehicle/vehicle conflict points or has proposed adequate measures to reduce the conflicts.
- ☐ Turn templates have been created showing site access and circulation for the largest of either emergency, service, or delivery trucks.

Pedestrian and Bicycle Circulation

- ☐ Site plan provides a clear path of travel between project building/s, parking areas, and public street sidewalks.
- ☐ Site plan has eliminated vehicle/pedestrian and vehicle/bicycle conflict points or has proposed adequate measures to reduce the conflicts.
- ☐ On site sidewalks provide sufficient width such that vehicle overhang does not reduce the unencumbered width to less than four feet (8.76.070.A.7a).