City of Hayward Transportation Impact Analysis Guidelines

Final Draft

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Contents

1 Introduction

1.1 PURPOSE OF THE TRANSPORTATION IMPACT ANALYSIS GUIDELINES

This guidelines reference is a comprehensive guide that:

1. Outlines the review procedure and document requirements for development projects, City transportation projects, and General Plan amendments.
2. Provides the screening criteria, adopted thresholds of significance, pre-approved mitigations, and monitoring requirements within the context of the California Environmental Quality Act (CEQA).
3. Provides the criteria and project characteristics used to determine when a Local Transportation Analysis (LTA) is required.
4. Outlines project attributes to be considered when determining impacts to the local transportation system.
5. Provides the appropriate methodologies, procedures, and processes for mitigating impacts to the local transportation system within the City of Hayward.

1.2 CALIFORNIA ENVIRONMENTAL QUALITY ACT

Per Senate Bill 743 (SB 743), the focus of transportation analysis under the California Environmental Quality Act (CEQA) will shift statewide from level of service (LOS), as measured by roadway capacity and vehicle delay, to vehicle miles traveled (VMT) beginning July 1, 2020. VMT provides an estimate of the amount and distance driven by vehicle to reach a destination. SB 743 does not preclude LOS for operational analysis, but LOS may no longer be used as a method for evaluating a project's potential transportation impacts under CEQA.

1.3 GENERAL PLAN GOALS AND POLICIES

In July 2014, the City Council adopted the General Plan Update to guide future growth and development in Hayward through the year 2040. The General Plan guides Hayward's development toward goals and strategies related to land use, mobility, and sustainability. Development projects, City transportation projects, and General Plan amendments will be reviewed based on their qualitative adherence to the General Plan. On June 16, 2020, the City Council amended the General Plan to replace LOS with VMT as the measurement to be used when conducting Transportation Impact Analysis under CEQA.

Transit-Oriented Design

Hayward's 2040 General Plan establishes Transit-Oriented Development (TOD) Overlay Districts that will encourage higher-intensity development near transit, such as current BART stations, and

along key bus corridors such as Hesperian Boulevard. General Plan 2040 calls for the majority of existing residential neighborhoods that are not close to transit to retain their current land use patterns. General Plan 2040 calls for the majority of the 41,000 new residents projected by 2030 to be housed within the PDAs.

Mobility

General Plan 2040 acknowledges that cars will continue to be a key part of Hayward's transportation network, but it places a new emphasis on more sustainable ways of getting around—walking, bicycling, and public transit. The General Plan incorporates the concept of "complete streets" that serve all modes of transportation. It also acknowledges that in strategic locations where better public transit, interesting buildings and spaces, and improved bicycle and pedestrian amenities are considered priorities, traffic congestion may be an acceptable trade-off.

2 Overview of Process

Public Works-Transportation staff determines the need for a **CEQA transportation analysis (CTA)** in conformance with the CEQA guidelines and City policies. In addition, a **local transportation analysis (LTA) may be required** for conformance with the City's adopted plans and policies.

Dependent of size, not all projects will require both CEQA transportation analysis (CTA) and local transportation analysis (LTA). Public Works-Transportation staff will make the final determination as to what is required based on the project's traffic scoping memorandum. There are three possible transportation analysis combinations that Public Works-Transportation may require of a project after review of the traffic scoping memorandum:

1. Project requires a CTA and LTA
2. Project requires an LTA
3. Project requires no transportation analysis

2.1 ROLES OF THE PARTICIPANTS

Project Applicants[1] – Applicant refers to the owner of the property or project. The applicant is responsible for overseeing the completion of reports, documentation, permits, and payment of fees. The applicant shall be responsible for choosing and contracting with a qualified primary transportation consultant to perform the transportation review.

Consultants – The City is responsible for choosing and contracting with a qualified, primary transportation consultant to perform the transportation review. Consultants must be licensed transportation engineers or qualified transportation planners; the City maintains a list of pre-qualified firms. The City reserves the right to conduct a peer review of studies that were previously provided by an applicant's consultant. The peer review transportation consultant will review the primary transportation consultant work to ensure the project meets all City standards.

City of Hayward – The City of Hayward refers to employees and departments representing the City of Hayward Department of Public Works-Transportation Division staff. City staff will be responsible for reviewing and approving the proposed scope for transportation consultants. City staff will also review the CEQA document and transportation study, including review of the proposed mitigations and conditions of approval.

2.2 TRANSPORTATION ANALYSIS PROCESS

To initiate the Transportation Impact Analysis Process, consultants must draft a traffic scoping memorandum after completing a planning application. The traffic scoping memorandum will

[1] "Applicant" in these Guidelines is used to refer to all instances where the person or entity is responsible for project requirements. Where work may be performed by peer-review consultants, the terms "applicant," "consultant," or "applicant/consultant" may be used.

provide project description and background information on the project and will be used by Public Works-Transportation staff to determine the various analyses to be included in the TIA.

Traffic Scoping Memorandum: Upon initial application for a new development, the project consultant shall include a traffic scoping memorandum. The City of Hayward will review the traffic scoping memorandum with screening criteria established in Section 3.3 to determine if the project meets the CEQA screening criteria and types of analysis to be required in the LTA. The traffic scoping memorandum should include:

- Project land use type
- Number of housing units
- Total gross floor area
- Distance from major transit stops
- Density of housing or gross floor area ration (FAR)
- Number of parking spaces
- Affordable residential units included
- Previous or existing uses
- Project location
- VMT per capita or per employee
- Trip generation and distribution

2.3 SCOPE OF WORK

The information provided in the Traffic Scoping Memorandum will be reviewed by the City of Hayward to determine if it meets criteria for a CEQA screen and for completeness and consistency with the General Plan and applicable Specific plan. The CEQA screen (see section 3.3: Screening Criteria) helps determine the type of CEQA document and analysis, if any, is required. Upon completion of initial coordination with the project consultant, a finalized project description and scope of work will be agreed upon for the purposes of preparing the TIA.

Figure 1 below presents a table of high-level components based on project description and meeting CEQA screening criteria. The cells marked with an 'X' indicate a required analysis and the columns show types of projects based on trip generation and distribution and CEQA screen. The City maintains discretion to require specific reports, analyses, and background information as part of the LTA, including for projects generating fewer than 110 trips per day. Projects sponsors should consult Figure 1 to determine the high level-level elements to include in the scope of work.

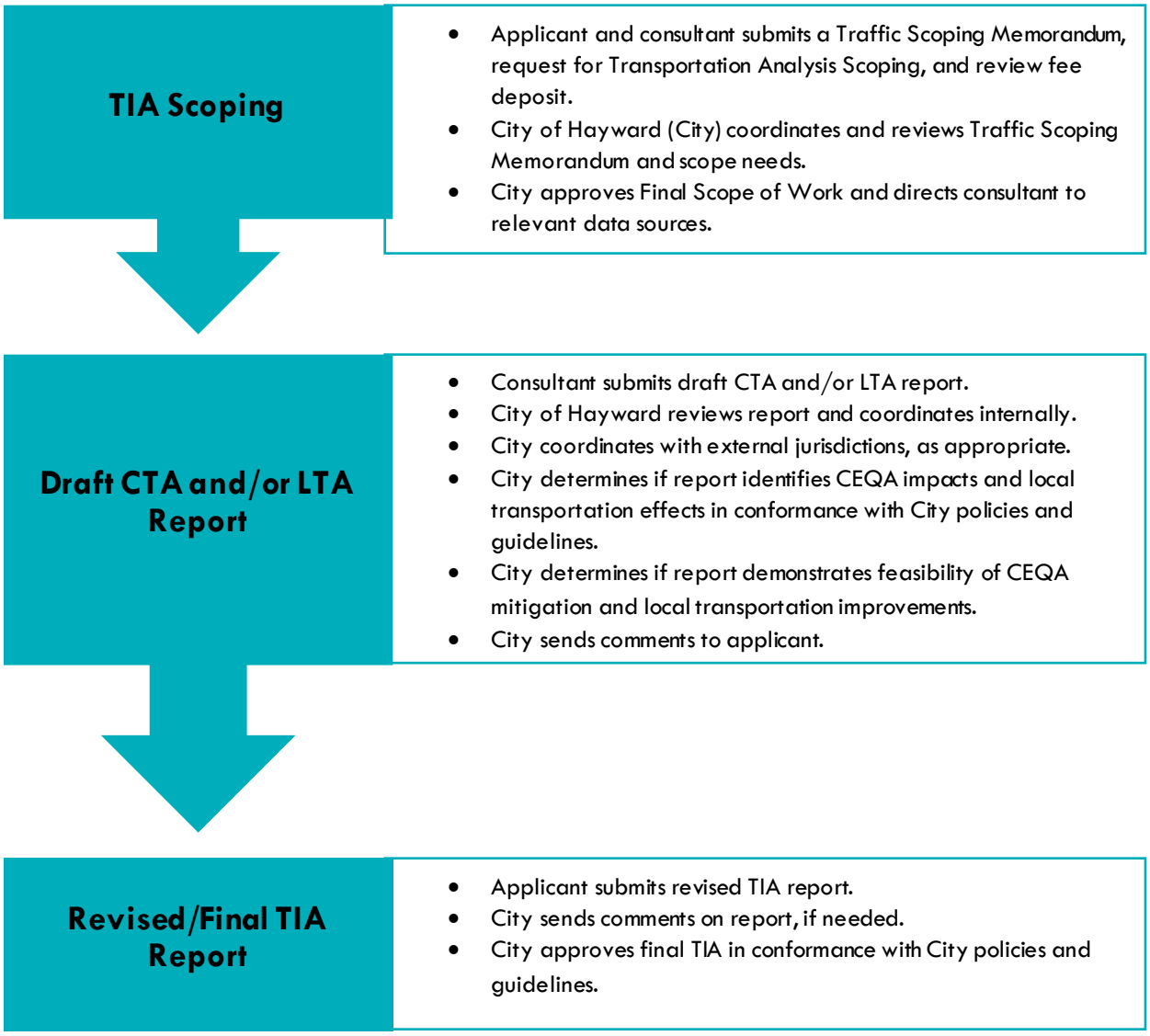
Figure 1 Typical Study Components

Topic	Subtopics	Passes CEQA Screen and Small Project (<>110 trips)	Passes CEQA Screen and Large Project (>110 trips)	Does not pass CEQA Screen	Guidelines Section
Traffic Scoping Memorandum	Project Description	X	X	X	2.2
	Study Area Description	X	X	X	2.2
CEQA Transportation Analysis (CTA)	Screening	X	X	X	3.3
	VMT Analysis			X	3.4, 3.5
	Mitigations (if applicable)			X	3.7
Local Transportation Analysis (LTA)	Vehicle Operations		X	X	4.1
	Multimodal Operations	X	X	X	4.2
	Site Plan Review	X	X	X	4.3
Conditions of Approval	Conditions of Approval	X	X	X	

2.4 CEQA TRANSPORTATION ANALYSIS REVIEW

The City of Hayward will coordinate with appropriate agencies, organizations, and jurisdictions for review as appropriate. The City of Hayward will provide comments on the draft CTA to be addressed in the final CTA report. Upon approval, the final CTA will be incorporated into the CEQA documentation for the project. The project consultant shall submit one (1) final CTA report to the City. Figure 2 presents a flow chart of the CEQA TA review process.

Figure 2 Transportation Analysis Process Overview



3 CEQA Transportation Analysis

CEQA transportation analysis requires an evaluation of a project's potential impacts related to VMT. This section provides the environmental checklist, screening criteria, adopted thresholds of significance, and methodologies of analysis to be used in transportation impact analysis (TIA) reports and CEQA documents for development projects.

3.1 ENVIRONMENTAL CHECKLIST

In accordance with the latest CEQA Statute & Guidelines, a project should be reviewed for potentially significant transportation impacts on the environment. Project applications are responsible for including a description/review of how the project may impact the following:

- Conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
- Conflicts, or is inconsistent, with CEQA Guidelines section 15064.3, subdivision (b).
- Substantially increases hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Results in inadequate emergency access.
- Causes substantial additional VMT per capita, per service population, or other appropriate efficiency measure, which will be explored in later sections.

Where project applications do not provide sufficient information to ensure less than significant impacts to the environmental checklist, City of Hayward staff may request additional analysis from the project consultant. It is recommended that project applicants/consultants address all elements of the environmental checklist upon first submission to minimize processing delays and workload impacts to City staff.

3.2 CEQA TRANSPORTATION PERFORMANCE METRICS

Vehicle Miles Traveled

VMT is the total miles of travel by personal motorized vehicles a project is expected to generate in a day. VMT measures the full distance of personal motorized vehicle trips with one end within the project.

VMT per Capita

VMT per capita measures the total VMT of all vehicle miles traveled that begin or end at households (residences) in a geography divided by the number of residents in that geography. A city's VMT per capita is not truncated by travel into another jurisdiction and does not include pass through travel.

(Total Home-based VMT / Total Population = VMT per Capita)

VMT per Employee

VMT per employee measures the VMT of only the commute travel (employee VMT) to workplaces in a geographic area divided by the number of jobs in that geographic area. A city's VMT per employee is not truncated by travel into another jurisdiction and does not include pass through travel. Heavy-duty truck and customer VMT is not considered in the calculation.

(Total Employee VMT / Total Number of Employees = VMT per Employee)

Net Change in Total VMT

When assessing a retail land use or similar project, the project's total VMT is measured. The total VMT for the region with and without the project is calculated and the difference between the two scenarios is the net change in total VMT that is attributable to the project. The region should be defined based on typical travel patterns (county or multiple counties).

3.3 SCREENING CRITERIA

A detailed CEQA transportation analysis would not be required if a project meets one of the City's screens and all screening criteria for that screen.[2] Figure 3 presents the screening criteria for projects that are expected to result in less-than-significant VMT impact based on project description and/or location. A screened-out project may be required to provide a Local Transportation Analysis (LTA) to assess non-CEQA transportation aspects of a project. If a component of a mixed-use project meets the screening criteria, only the component, not the entire project, would be screened out of a detailed CEQA transportation analysis.

Figure 3 Screening Criteria for Land Use Projects

Screen Type	Screening Criteria
Small Infill Projects	Must meet *one* of the following: ▪ Single-family detached housing of 15 units or less ▪ Single-family attached or multi-family housing of 25 units or less ▪ Office of 10,000 square feet of gross floor area or less ▪ Project generating 110 trips per day or less for other land uses
Local Serving Retail	▪ 50,000 square feet of total gross floor area or less
Local Serving Public Facilities	▪ Local serving public facility (determined with staff input, depending on the land use)

[2] The screening criteria are consistent with the purposes described in Section 21099 of the California Public Resources Code and closely aligned with the recommended screening criteria provided in the OPR's 2018 Technical Advisory.

Screen Type	Screening Criteria
Residential Employment, and Retail Land Use Projects or Components	▪ **Either of the following locations**: – Within a half mile of a major transit stop[3] – In an area with low (below the threshold) VMT per capita/employee and in an area with planned growth (Office Employment/ Residential) – In an area with below average VMT per employee and in an area with planned growth (Industrial Employment) And the following: ▪ **Density/FAR:** – Minimum gross floor area ratio (FAR) of.75 as applicable for office employment projects – Minimum of 35 units per acre as applicable for residential projects – If located in an area where zoning calls for lower than 0.75 FAR or fewer than 35 units per acre, the maximum FAR or units per acre density allowed must be used ▪ **Parking**: No more than the minimum number of parking spaces required; in cases where no minimum is required and a maximum is identified, no more than the maximum number of parking spaces ▪ Does not replace affordable residential units (including naturally occurring affordable residential units) with a small number of moderate- or high-income residential units ▪ **Consistent** with Plan Bay Area, the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Transportation Commission)
Restricted Affordable Residential Projects or Components	▪ **Affordability**: 100% deed-restricted affordable housing (exception for the manager's unit(s)); affordability must extend for a minimum of 55 years for rental homes or 45 years for for-sale homes. Affordability for this purpose is restricted to households making 80% or less of the area's median income. ▪ **Location**: within an area with below average VMT per capita ▪ **Parking:** no more than the minimum number of parking spaces required; in cases where no minimum is required and a maximum is identified, no more than the maximum number of parking spaces

Small Infill Projects

Projects below the size screen would not require a detailed CEQA transportation analysis. CEQA Guidelines Section 15303 provides a categorical exemption for new construction or conversion of small structures of up to 10,000 square feet of office or 110 trips per day for other land uses. Hayward's policy includes infill residential projects of up to 15 single-family homes or 25 multi-family homes.

Local Serving Retail

New retail development typically redistributes existing shopping trips instead of creating new trips. Local-serving retail projects close to where people live, results in a decrease in VMT, whereas

[3] A major transit stop has rail service OR two or more intersecting bus lines with 15-minute peak commute frequencies or better (Pub. Resources Code § 21064.3).

regional-serving retail projects can increase VMT. Local-serving retail is defined as a project below 50,000 square feet, which is presumed to have a less-than significant impact.

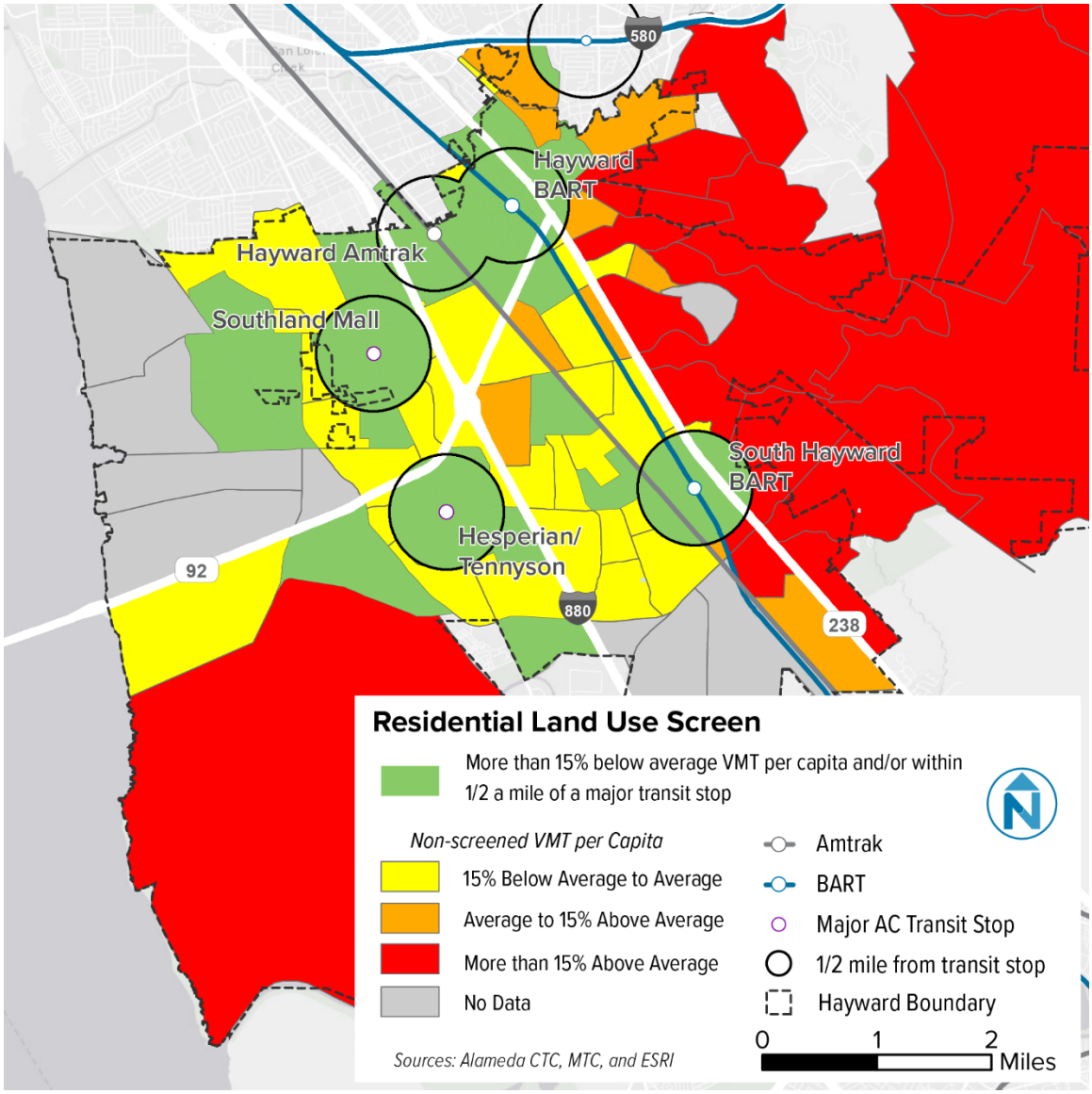
Local Serving Public Facilities

Public facilities are publicly owned or controlled such as police stations, fire stations, passive parks, public utilities, and other similar facilities. Local serving public facilities improve people's proximity to recreation, safety, and other important community needs. If a public facility is determined to be local serving, the project would be screened out of a detailed CEQA transportation analysis.

Location-Based Screening for Residential Projects

Residential land use projects located in areas of low VMT and/or within a half mile of a major transit stop or corridor and that include low VMT-supporting features will produce low VMT per capita. These areas are shown in Figure 4. Projects must comply with the criteria listed in Figure 3.

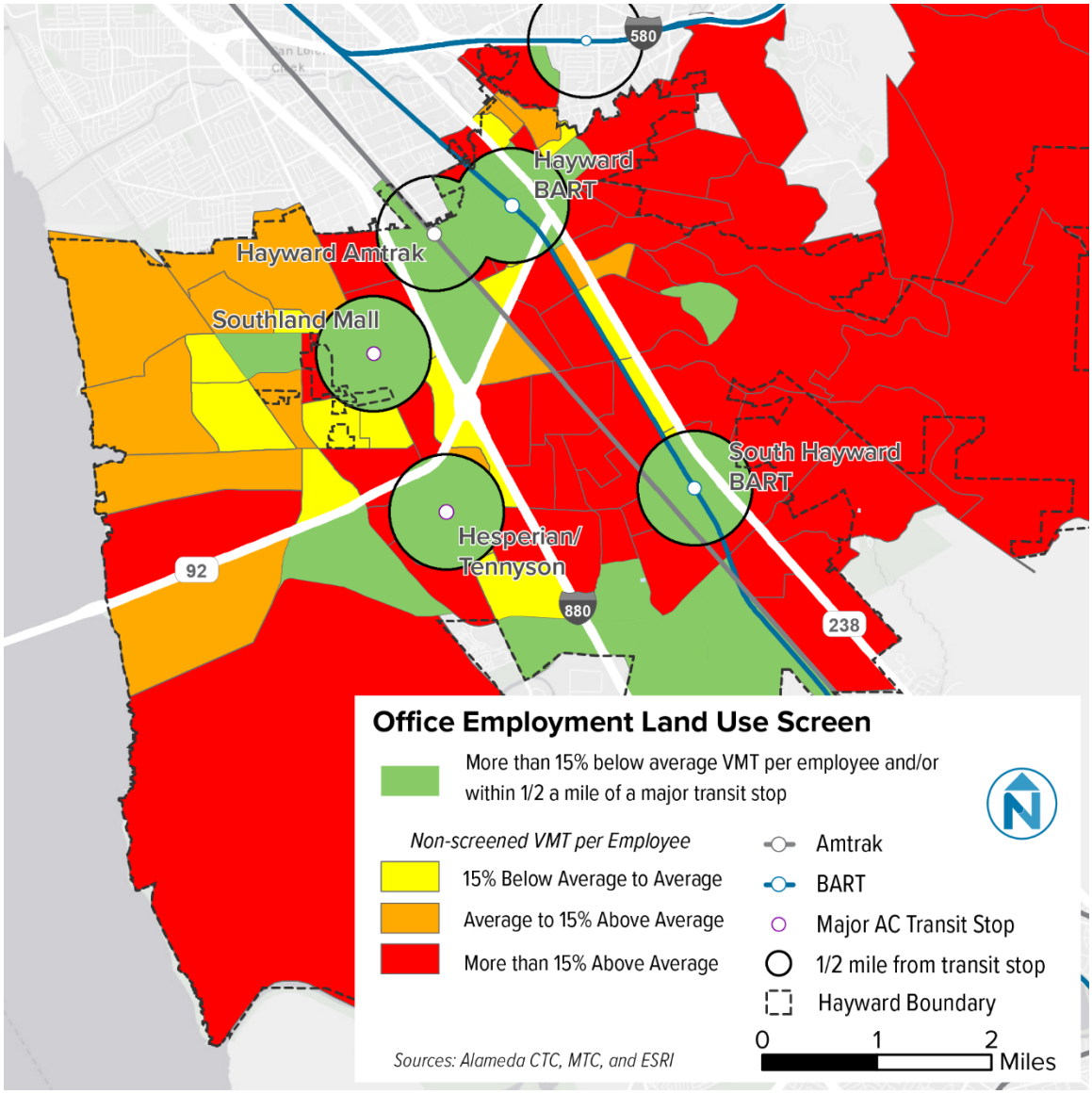
Figure 4 CEQA Transportation Screening Map for Residential Projects



Location-Based Screening for Office Projects

Office projects located in areas of low VMT and/or within a half mile of a major transit stop or corridor and that include low VMT-supporting features will produce low VMT per employee. These areas are shown in Figure 5. Projects must include features that are similar or better for lowering VMT than what exists today for density and parking as detailed in Figure 3.

Figure 5 CEQA Transportation Screening Map for Office Projects[4]

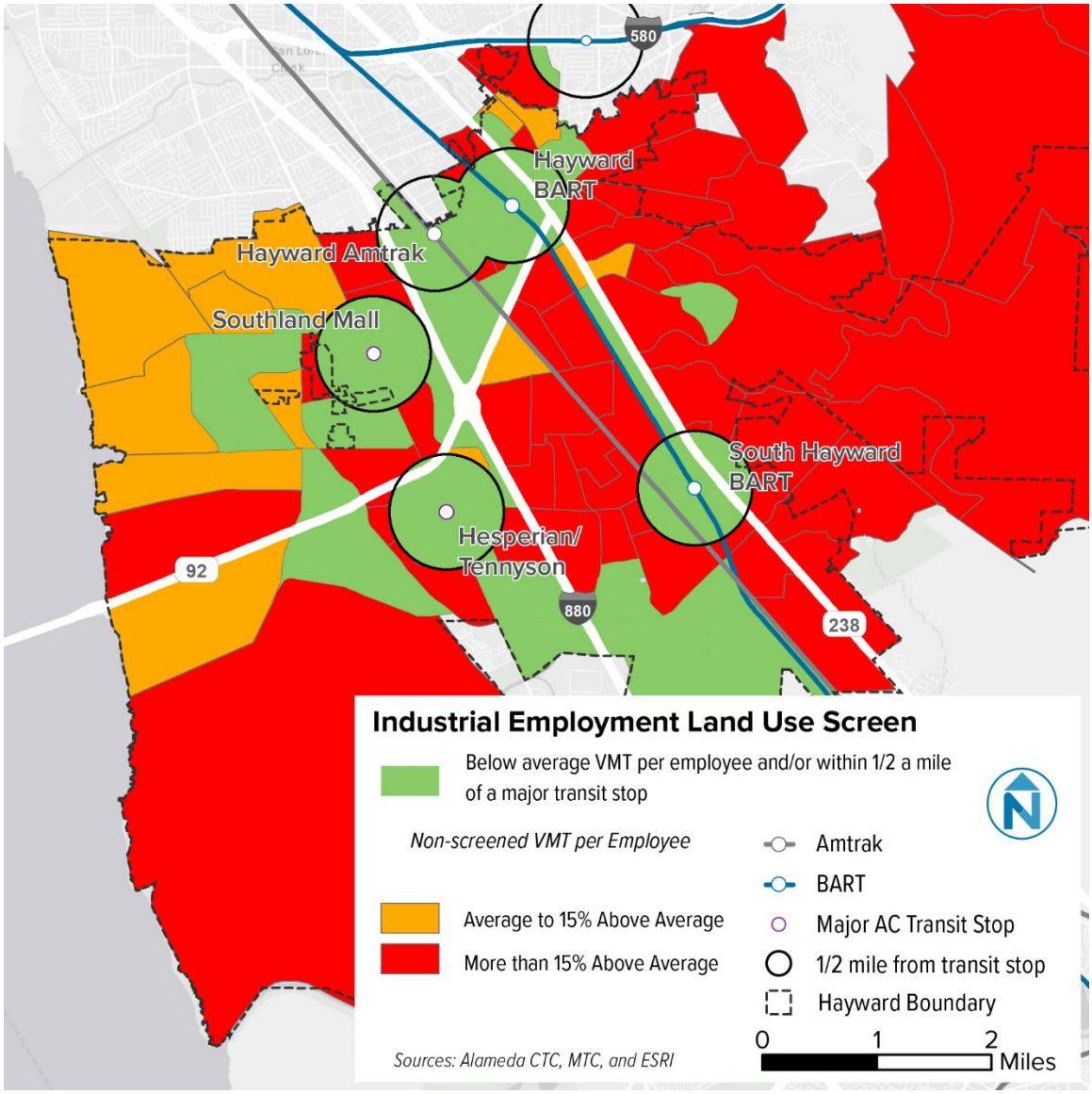


Location-Based Screening for Industrial Projects

Industrial employment projects located in areas of low VMT and/or within a half mile of a major transit stop or corridor and that include low VMT-supporting features will produce low VMT per employee. These areas are shown in Figure 6. Projects must include features that are similar or better for lowering VMT than what exists today for density and parking as detailed in Figure 3.

[4] Maps are examples, official VMT maps are available through the Hayward GIS portal

Figure 6 CEQA Transportation Screening Map for Industrial Projects

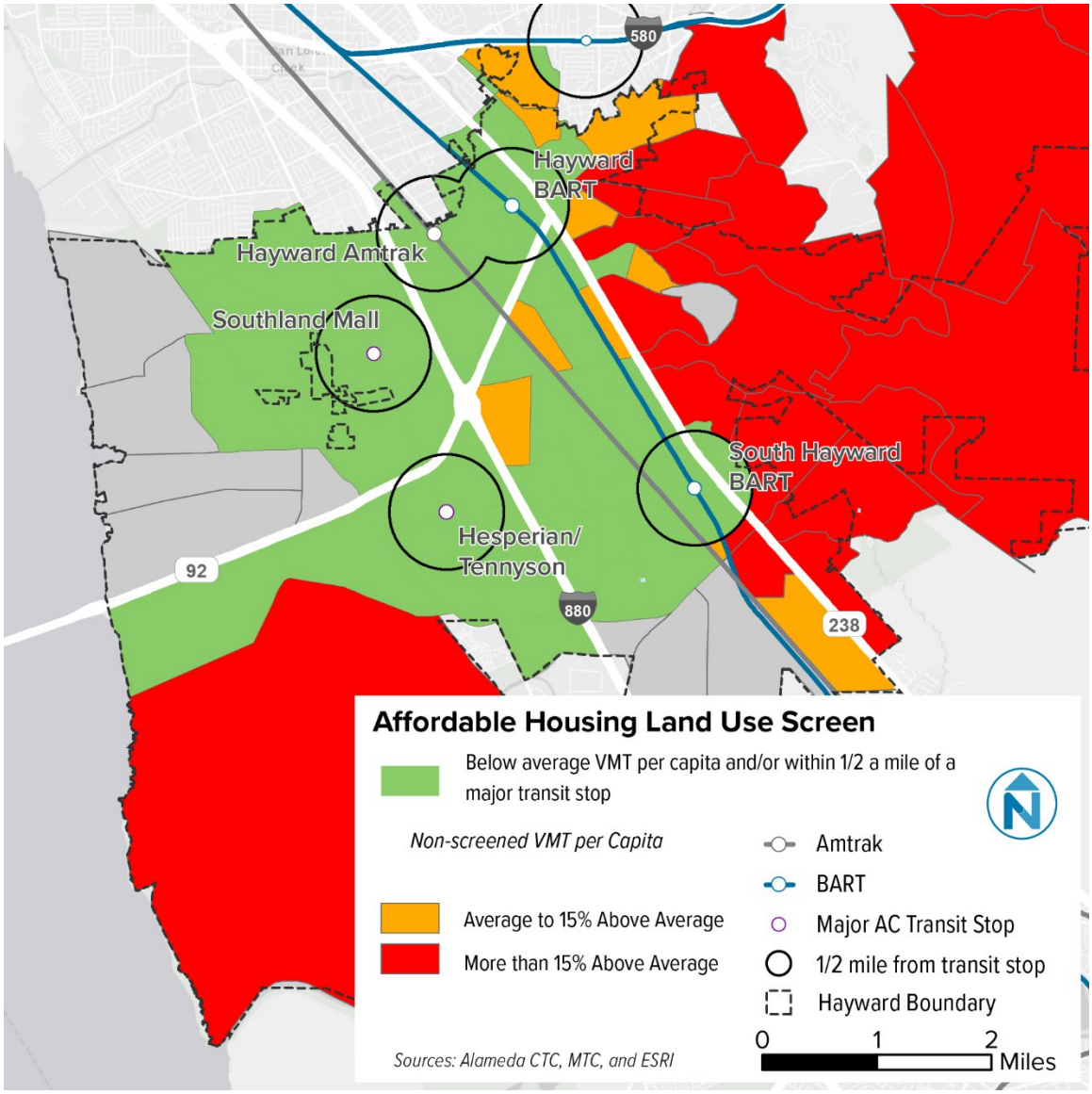


Location-Based Screening for Affordable Housing Projects

Deed-restricted affordable housing, defined as developments that are 100 percent affordable for low-income families making 80% or less of area median income, correlate with reductions in VMT compared with market-rate housing. Projects must comply with the criteria listed in Figure 3.

Figure 7 presents the recommended affordable housing screen based on the following geographic criteria: located in an area with a below average VMT and/or within a half mile of a major transit stop or corridor. Projects must comply with the criteria listed in Figure 3.

Figure 7 CEQA Transportation Screening Map for Affordable Housing Projects



3.4 THRESHOLDS OF SIGNIFICANCE

When a project does not meet the screening, criteria described in the previous section, a CEQA transportation analysis (TA) will be required. This analysis is used to evaluate a project's VMT generation against the appropriate thresholds of significance. Figure 8 presents the thresholds of significance for development projects as established in the General Plan Amendment.

Figure 8 Adopted Thresholds of Significance for Projects by Land Use

Land use	Threshold of Significance
Residential	15% below existing average VMT per capita for the City of Hayward
Employment - Office	15% below existing regional average VMT per employee
Employment – Industrial	Existing regional average VMT per employee
Retail	Net increase in total regional VMT
Mixed Uses	Each land use component of a mixed-use project will be analyzed independently, applying the significance threshold for each land use component from the enumerated project types in this Table.
Change of Use or Additions to Existing Development	Changes of use or additions to existing development will be analyzed applying the significance threshold for each land use component from the enumerated project types in this Table.
Area or Specific Plans	Each land use component will be analyzed independently, applying the significance threshold for each land use component from the enumerated project types in this Table.
General Plan Amendments	General Plan Amendments will be analyzed in conformance with the General Plan's definition of VMT. An increase in City total VMT is a significant transportation impact.
Other Land Uses Not Defined	Methodology to be determined by City of Hayward Transportation Division staff on a project by project basis.

These thresholds of significance are referenced in General Plan Policy M-1.5: Transportation Analysis and may be updated through City Council adoption as local and regional VMT and GHG emissions goals shift in response to changes in population and transportation patterns. Additionally, the travel demand models used to determine VMT will change as they are updated. The City will revisit these thresholds at the time of the General Plan update, when major changes to the City's land uses and transportation network occur, and/or if new data substantially changes the map-based screens.

3.5 VMT ANALYSIS TOOLS

Projects that require a CEQA transportation analysis may use one of two tools for estimating VMT and/or quantifying mitigation measures:

1. City of Hayward VMT Maps and Alameda County VMT Calculator
2. Alameda CTC Travel Demand Model

Alameda County VMT Estimation Tool

Alameda County Transportation Commission (CTC) is developing a Mobility Management VMT Reduction Calculator tool (VMT Calculator) for cities in Alameda County. The VMT Calculator will assess a project's potential VMT (Project VMT) reduction based on the project's description, location, and attributes. For most residential and employment projects or components, the VMT Calculator is the approved method to calculate Project VMT.

Until the more user-friendly VMT Calculator is released, projects will work with the City to scope the CTA analysis using the same data and methodologies.

Alameda CTC Travel Demand Model

For General Plan updates, area plans, non-residential or non-employment land use projects, very large projects, or projects that can potentially shift travel patterns, the VMT Calculator may not be appropriate or adequate for the CEQA transportation analysis. In such cases, the Alameda CTC Travel Demand model may be required based on a preliminary review of the project. For projects requiring model runs, the transportation consultant will coordinate with Alameda CTC and Hayward's Division of Transportation on the scoping process to obtain the model information.

3.6 VMT ESTIMATION PROCESS

Residential and Employment Projects

Residential and employment (office and industrial) projects generate new travel, with the magnitude of VMT increase primarily determined by the location of the project. For this reason, the VMT per capita for these project types is estimated using a combination of the City's VMT mapping (which provides the VMT for an "average" residential or employment project in the vicinity of the project) and adjustments using the Alameda CTC VMT Calculator (which provides percent changes to reflect the specific project definition).

Step 1 – Obtain Base VMT

The Base VMT for a project can be found by consulting the VMT maps illustrated in Figure 9 and Figure 10. The Base VMT for the project is simply the VMT per capita or VMT per employee in the Transportation Analysis Zone (TAZ) or census block where the project is located. The precise Base VMT per capita and per employee will be available at the census block level on GIS Data Portal. If the project is located on the border of two or more TAZs, then the Base VMT is the average between the TAZs where the project is located.

Step 2 – Calculate Project VMT

The project specific VMT can be calculated by applying percentage changes from the Alameda CTC VMT Calculator. These percent changes reflect the fact that projects with low parking provision, mixing of uses, or high density may have a VMT per capita or VMT per employee that is lower than an "average" project in the TAZ. If the project specific VMT falls above the threshold of significance for the project type, applicants may work with consultants to adjust the project definition to lower the VMT. If the project specific VMT is above the threshold and the project cannot be further redefined, mitigation measures such as TDM strategies or multimodal transportation infrastructure should be considered (see Section 3.7 Mitigation Measures).

Figure 9 Map of Hayward VMT per Capita

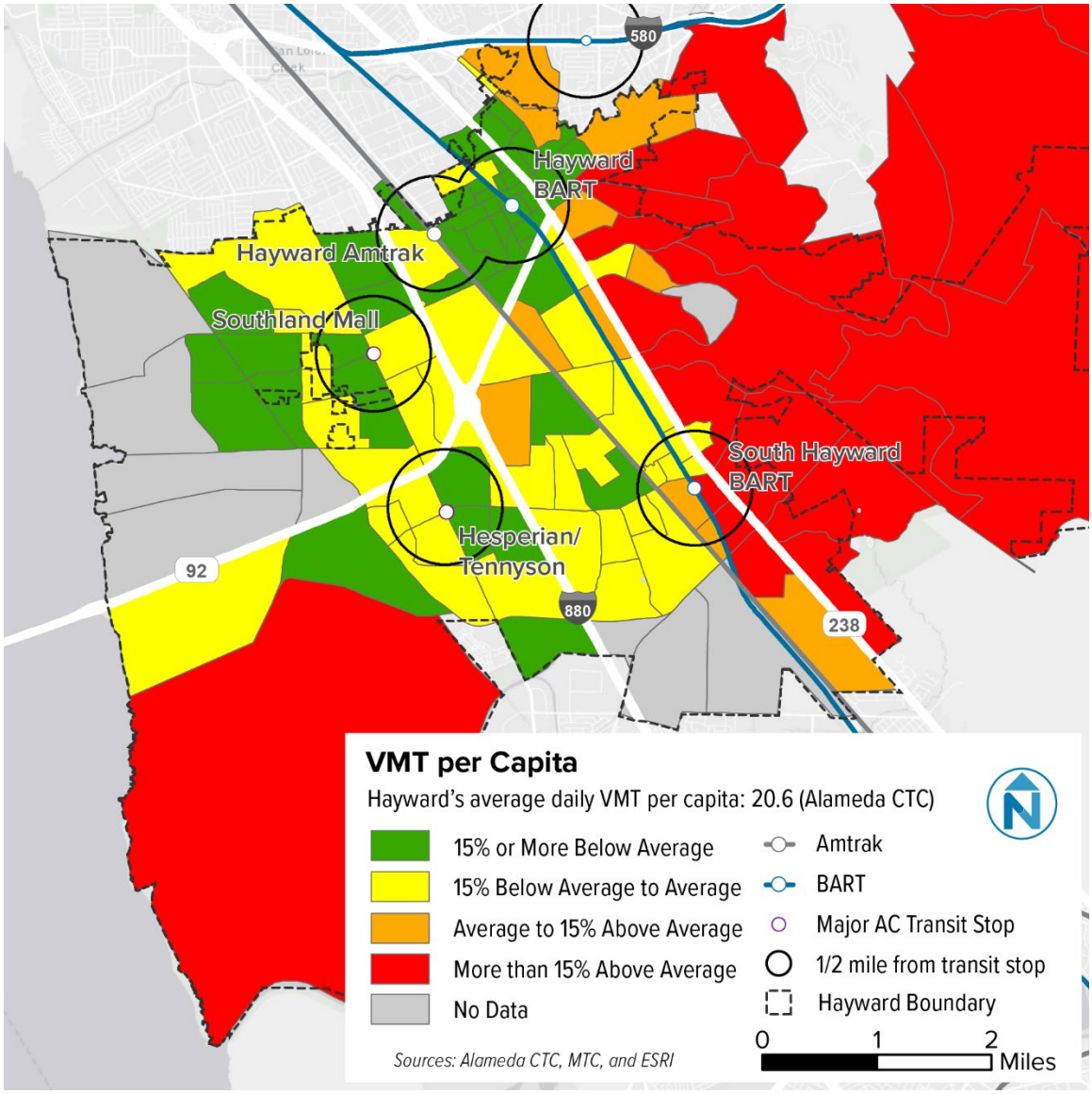
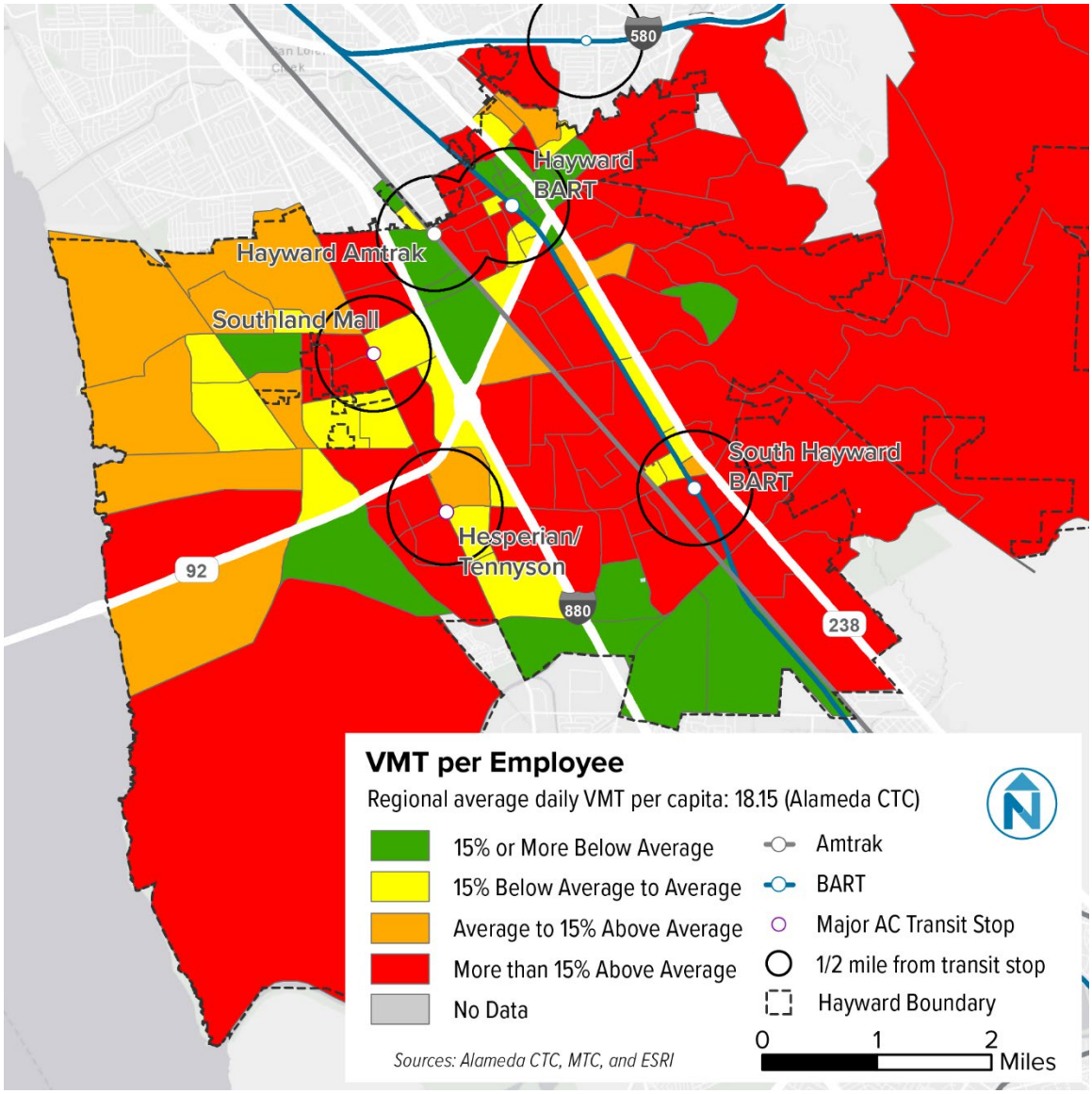


Figure 10 Map of Hayward VMT per Employee



Alameda CTC's travel demand model produces VMT estimates for Alameda County and is updated periodically. The City of Hayward will maintain relevant VMT maps as the county travel demand model is updated or is replaced by an alternative travel demand model.

Retail Projects and Area Plans

Retail projects typically redirect existing travel and are therefore estimated using a net VMT method. Area Plans typically consist of a significant magnitude of development that may alter regional travel patterns in ways that are not reflected in base VMT mapping. For this reason, VMT for these project types is analyzed using the Alameda CTC Travel Demand Model. The basic process is to analyze the VMT within a reasonable travel-shed around the project site with and without the project and determine if the project results in a net increase or a net decrease. Sub-

area validation of the Travel Demand Model may be required based on consultation between the City and applicant.

3.7 MITIGATION MEASURES

Mitigation VMT Reductions

Projects above the VMT threshold must propose measures to reduce project VMT or mitigate a CEQA transportation impact. The applicant/consultant must provide data and/or research attesting to the effectiveness of proposed mitigation measures at achieving their stated reductions in VMT.

Projects may utilize the mitigation measures provided in Appendix A with associated VMT percentage reductions, which are considered "pre-approved" by the City of Hayward. These measures fall in five categories: land use strategies, parking management, neighborhood enhancements, transit strategies, and TDM measures. The list of measures in Appendix A includes measures included in the Alameda CTC VMT calculator, as well as additional measures adapted from CAPCOA and the City of San José.

Mitigation Monitoring

If a project proposes to include any TDM measures as a mitigation measure, the project must include a TDM Plan that demonstrates how it will provide monitoring and reporting, compliance, and funding for the life of the project. The TDM plan will become part of the conditions of project approval. The monitoring portion of the TDM Plan must identify the monitoring elements and time frame for reporting to the City. Monitoring elements can include a TDM program report, parking surveys, resident/employee surveys, and/or a trip cap as well as the time frame for submitting reports.

A trip cap is a maximum number of motor vehicle trips within specific timeframes that are allowed to be generated by a project. Projects with substantial TDM-based mitigations may be required to include a trip cap in their TDM plan based on the determination of Transportation Division staff.

CUMULATIVE IMPACT ANALYSIS

Projects must demonstrate consistency with the Hayward General Plan to address cumulative impacts. If a project is consistent with the General Plan, Climate Action Plan and Bicycle and Pedestrian Master Plan, it will be considered part of the cumulative solution to meet the General Plan's long-range transportation goals, resulting in a less-than-significant cumulative impact. Projects must be consistent with and contribute to the Recommended Bikeway Facilities (Figure 42), Recommended Pedestrian Network (Figure 45), and Proposed Transit Supportive Improvements (Figure 46) maps in the Bicycle and Pedestrian Master Plan, as applicable. Projects determined to be inconsistent with the General Plan and other plans and policies may be required to conduct a project-specific cumulative analysis based on the determination of Transportation Division Staff.

4 Local Transportation Analysis

If deemed necessary by the City of Hayward, an applicant/consultant must include a Local Transportation Analysis (LTA) within the Transportation Impact Assessment (TIA). This will typically apply to any project that does not pass the CEQA screen as shown in Figure 1, and some projects that pass the CEQA screen but call for additional local operational or site access analysis. The LTA is intended to ensure safe multimodal operations and site access.

The LTA includes the following sections:

- Vehicular Operations Analysis
- Multimodal Operations Analysis
- Site Plan Assessment

Figure 11 provides an overview of the analysis that makes up each section. Note that not every analysis type is required for every project, see each subsection for the specific requirements. In general, the specific analyses required for a particular project will be determined as part of the Transportation Analysis scope of work. Additional analysis other than those listed in Figure 11 may be required at the City's discretion.

Figure 11 Local Transportation Analysis Subsections

LTA Section	Analysis Type	Subsection
4.1 Vehicle Operations	Trip Generation, Distribution, & Assignment	4.1-1
	Intersection Operations	4.1-2.
	Queueing Analysis	4.1-3
	Traffic Signal Warrants	4.1-4
	All-way Stop Analysis	4.1-5
	Site Access/Egress	4.1-6
	Alameda CTC Congestion Management Program Analysis	4.1-7
4.2 Multimodal Operations	Planned Bicycle and Pedestrian Infrastructure	4.2-1
	Bicyclist and Pedestrian Behavior & Travel Patterns	4.2-2
	Pedestrian Crossing Safety	4.2-3
	Pedestrian Lighting	4.2-4
	Bus Stop Locations and Amenities	4.2-5
	Other Topics	4.2-6
4.3 Site Plan Access and Design Review	Parking Stall Dimensions	4.3-1
	Parking Layout	4.3-2
	Driveway Sight Distance	4.3-3
	Internal Bicycle and Pedestrian Circulation	4.3-4
	Fire Safety and Solid Waste Geometric Design Requirements	4.3-5
	Bicycle Parking	4.3-6

LTA Section	Analysis Type	Subsection
	Speed Control Measures within the Project Site	4.3-7
	Public Access Through Project Site	4.3-8
	Site Design and Proposed Operations to Limit Negative Effects	4.3-9

4.1 VEHICLE OPERATIONS

4.1-1 Trip Generation, Distribution, & Assignment

Threshold for Requiring Analysis

The City of Hayward will review the trip generation calculations included in the project's Traffic Scoping Memorandum. A more detailed analysis is recommended beyond a threshold of 50 peak hour trips or at the City's discretion.

Standards

The project consultant will develop the detailed analysis using the most current ITE Trip Generation Handbook unless a proposed alternative methodology has been approved by the City.

Analysis

The traffic analysis may include reasonable and supported pass-by trip assumptions, full-occupancy measurements, and trip distribution splits. Public Works-Transportation staff will provide direction. Applicant/consultant will verify square footage and use types of existing developments at site. Vacant uses generally shall not be subtracted out of trip generation calculations to reflect the most accurate estimate of new traffic in project vicinity when the project is ultimately completed and occupied. Trip distribution splits will factor in driveway locations, freeway access, locations of major generators/attractors, and other generally accepted engineering methodologies.

4.1-2 Intersection Operations

Intersection Selection

The City will approve a list of intersections to be included in the intersection operations analysis based on the project Traffic Scoping Memorandum. The analysis shall include all proposed project access driveways as study intersections.

Acceptable Methodologies.

Consultant shall confirm with City an appropriate methodology to be used throughout the intersection operations analysis. Previously developed plans, studies and projects in the project area can inform and define acceptable methodologies to provide consistency between documents. Acceptable methodologies may include:

- Highway Capacity Manual 2000;
- Highway Capacity Manual 2010;

- Highway Capacity Manual 6th Edition;

Unless otherwise directed by Public Works-Transportation staff, intersection operations and queuing analysis shall be prepared utilizing the Synchro software package from Trafficware. Consultant shall make available to the City any Synchro or software files associated with the project and/or analysis, upon City staff request.

Analysis Periods

The project consultant is required to perform Level of Service calculations under approved methodologies. Consultant will assess project impacts under a "No Project" scenario and a "With Project" scenario for the following periods:

- AM Peak Hours (6am to 9am)
- PM Peak Hours (3pm to 7pm)
- Other periods or scenarios may be added at the city's discretion on a case by case basis

Data Requirements

Data shall be collected not earlier than 24 months before submission of LTA to the City of Hayward. The City may require more recent data or allow older data at its discretion, based on the transportation facility characteristics. Intersection geometry and signal timing must be field verified.

LOS Goals

City policy aims to maintain vehicle level of service (LOS) goals without negatively impacting non-motorized street users.

LOS goals for signalized intersections are as follows:

- Maintain a minimum vehicle Level of Service "E" at signalized intersections during the peak commute periods except when a LOS F may be acceptable due to costs of addressing deficiencies or operational improvements
- Increase average delay at signalized intersections of no more than 5 secs for locations already at LOS level worse than the stated goal.

At unsignalized intersections the City does not set LOS goals, however, intersection operations are captured as follows:

- Traffic Signal Warrants Analysis, as outlined in Traffic Signal Warrants 4.14
- Increase average delay by no more than 5 seconds for locations already at LOS F.

4.1-3 Queueing Analysis

Queuing analysis shall be included in the LTA as required by the City. Consultant to confirm with the City an appropriate methodology to be used on the queuing analysis.

Queuing Goals

The queuing analysis shall demonstrate that the following operational goals can be achieved, as applicable for a project:

- Ensure that queues do not exceed capacity or extend into through travel lanes (turn bays/turn lanes)
- Ensure that queues do not extend to adjacent property frontage (driveway access)
- Ensure that queues do not extend onto public streets (drop-off loop).

The TIA shall analyze and provide recommendations to improve and address any queuing-related deficiencies based on the goals stated above. The City will consider both average and 95th percentile queues when determining if goals are met.

4.1-4 Traffic Signal Warrants

If operational deficiencies are identified at any unsignalized study intersection, traffic signal warrant studies need to be included in the LTA unless otherwise directed by Public Works-Transportation staff. These may include the following MUTCD Warrants:

- Warrant 1: 8-hour volume
- Warrant 2: 4-hour volume
- Warrant 3: Peak hour volume
- Warrant 4: Bicycle and Pedestrian volume
- Warrant 7: Crash history
- Additional warrants may be required based on site specifics

Consultant required to collect any volume and collision data, as needed.

4.1-5 All-way Stop Analysis

If operational deficiencies are identified at an unsignalized intersection that is not already all-way stop controlled, an all-way stop warrant analysis is required.

4.1-6 Site Access/Egress

Project access and egress driveways will be evaluated in the LTA to ensure driveway operations are safe, visible, and do not conflict with existing or planned pedestrian or bicycle facilities. Driveways should be minimized in both number and size. Additionally, where possible, driveways should include turn restrictions (i.e. right-in/right-out, left-in/no left-out, U-turn prohibitions).

General guidance for good driveway locations include:

- Driveways to align with existing intersections and avoid offset whenever possible (Figure 12)
- Driveways near signalized intersections discouraged (Figure 13)
- Driveway consolidation/concentrated points of access encouraged (Figure 14)
- Projects with drop-off loops should seek to have loop entrance (rather than loop exit) tie into existing intersections (Figure 15)
- Encourage access from lower speed and lower volume roadways where possible (Figure 16)

Figure 12 Driveway Alignment

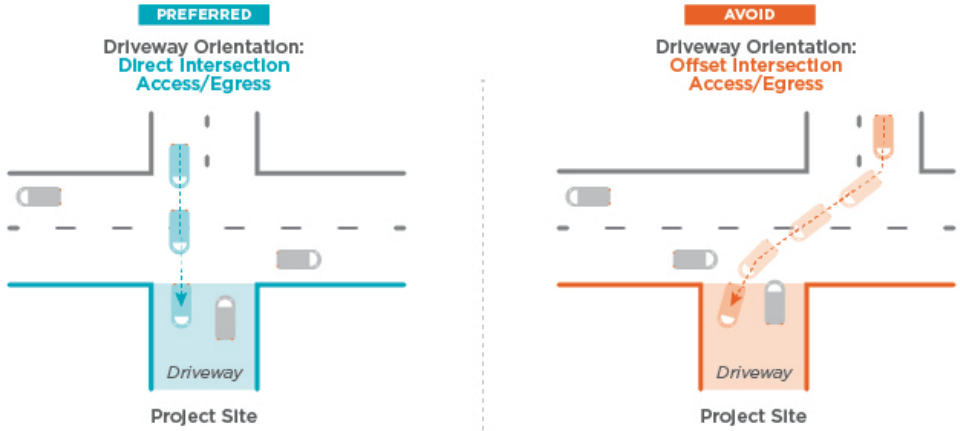


Figure 13 Driveway Proximity to Intersection

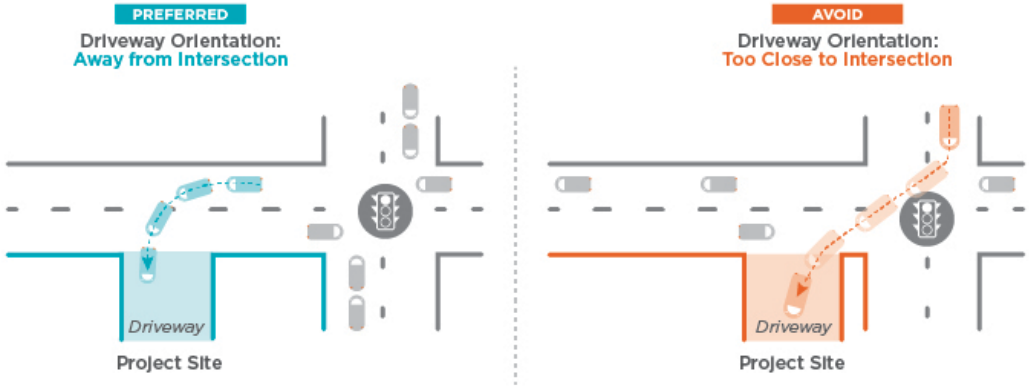


Figure 14 Driveway Consolidation

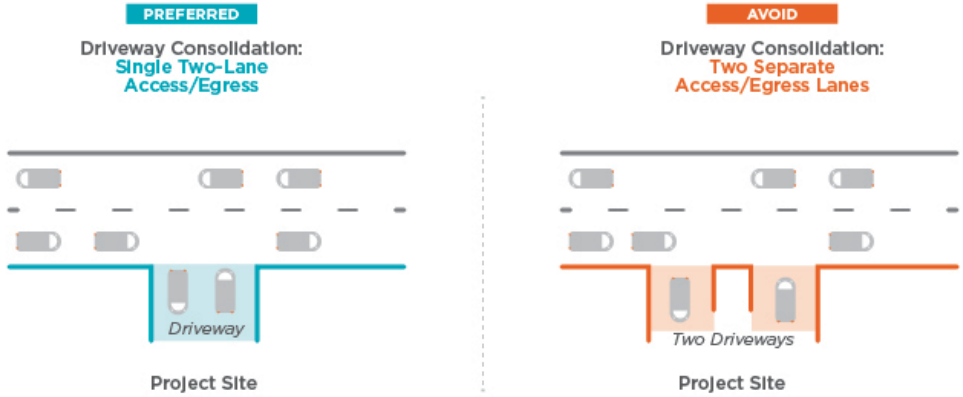


Figure 15 Loop Driveways

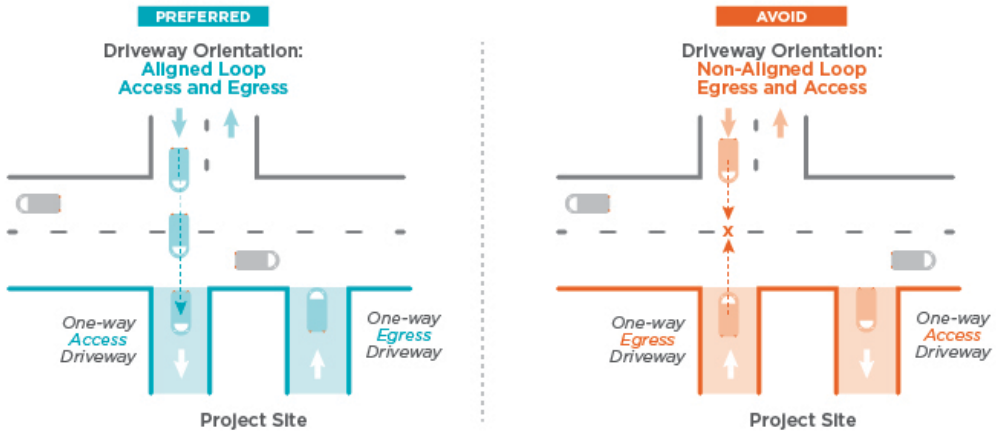
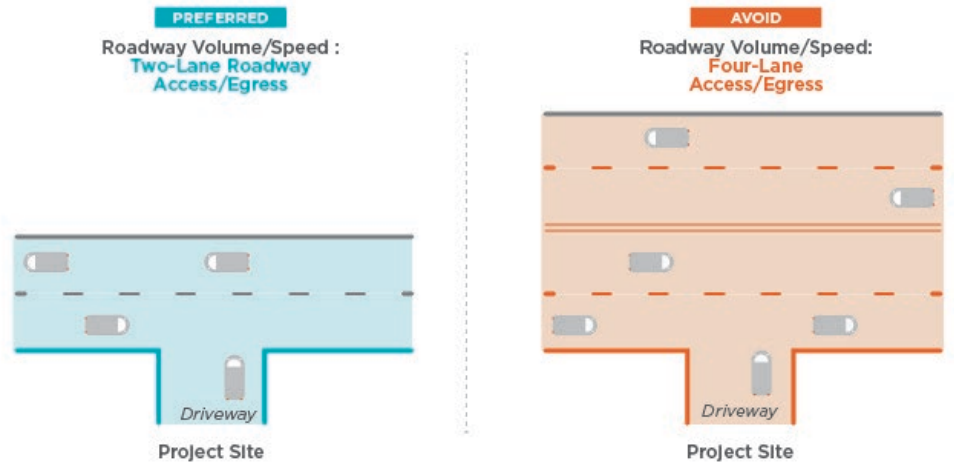


Figure 16 Driveway Access Street



The LTA should assess the number and location of driveways. Driveway design will be analyzed in terms of sight distance, queueing issues, required space to complete weaving/merging maneuvers, and proximity to intersections.

4.1-7 Alameda CTC Congestion Management Program Analysis

Congestion Management Program (CMP) analysis is required by the Alameda CTC for projects and plans that would generate 100 or more PM peak hour trips.

The CMP analysis, if required, includes LOS analysis for roadway segments as well as transit, bicycle, and pedestrian network analysis. Alameda CTC will determine the requirements, as outlined in the Land Use Analysis Program chapter of the Congestion Management Program which is updated every two years.

4.2 MULTIMODAL OPERATIONS

The LTA should assess how the project will affect operations for multimodal users accessing the project site, including bicycles, pedestrians, transit users, and other modes. The City will

determine if a proposed project reasonably and substantially affects the facilities or operations of the multimodal network and provide the consultant a list of required elements to be included in multimodal operations analysis.

4.2-1 Planned Bicycle and Pedestrian Infrastructure

The Planned Bicycle and Pedestrian Infrastructure element will include a summary of the bicycle- and Pedestrian related recommendations identified in the below documents located along the frontages of the proposed project. Applicant will be required to implement the bicycle and Pedestrian -related recommendations as part of the planned improvements to said frontage, except under special circumstances deemed by the City.

The Planned Bicycle and Pedestrian Infrastructure element will reference the City of Hayward's Bicycle and Pedestrian Master Plan, Safe Routes to School Plans, and any Specific Plans or Scoping Studies identified by the City. A review of the existing conditions and/or plans for improvements to the bicycle and pedestrian infrastructure may include facility types that are identified in the Bicycle and Pedestrian Master Plan, which includes but is not limited to:

- Protected and Separated Bike Facilities
- Neighborhood Bikeways
- Access to Trail Network
- ADA Curb Ramps
- High-Visibility Crosswalks
- Mid-block RRFBs
- Curb extensions
- Signal Improvements
- Mid-block Pedestrian Hybrid Beacons
- Transit supportive facilities

4.2-2 Bicyclist and Pedestrian Behavior & Travel Patterns

The Bicyclist and Pedestrian Behavior & Travel Patterns element will be developed by the consultant utilizing 5-year collision data near the project site if relevant, and site observations documented by a qualified transportation consultant.

5-year collision data will include collisions that occurred on all dates and times throughout the full year. Site observations to be recorded during typical operating conditions relative to site location and context, including but not limited to commute hours, midday peak, school hours, and other periods recommended by the City.

Data and observations will be summarized by the consultant and included as an attachment to the LTA. Summaries will include but are not limited to primary collision factors, direction of travel, compliance issues, near misses, travel pattern behaviors, and other considerations recommended by the City.

4.2-3 Pedestrian Crossing Safety

The Pedestrian Crossing Safety Element will include an analysis of existing uncontrolled crossings using the Federal Highway Administration's (FHWA) "Guide for Improving Pedestrian

Safety at Uncontrolled Crossings". The element will include all locations within walking distance of the project area (approximately ½ mile) and any extents identified by the City. Consultant will use the guidance provided by FHWA to analyze locations where crossing opportunities would support pedestrian activity in the project area.

The evaluation will include an inventory of the roadway network, existing pedestrian crossings, and recommendations for new crossings that will link paths, close gaps, and form complete networks of pedestrian-supportive infrastructure. It will include an analysis of the project's access points with recommendations for crossing locations that support safe access for pedestrians approaching from any/all direction/s.

4.2-4 Pedestrian Lighting

The Pedestrian Lighting Element will include an analysis of existing conditions using the FHWA's Informational Report on Lighting Design for Midblock Crossings. All affected signalized and unsignalized crossings will be included in the analysis.

4.2-5 Bus Stop Locations and Amenities

The Transit Element will include an analysis of the existing conditions of transit stops and amenities within the project area based on the AC Transit Multimodal Corridor Guidelines. Key items include transit operation efficiency and transit-rider amenities related to safety and comfort. Where relevant and feasible, the applicant may incorporate transit improvements to any existing stops located along the project frontage. Consultant shall refer to the *Transit Supportive Infrastructure* section and Proposed Transit Supportive Infrastructure Map (Figure 46) of the Bicycle and Pedestrian Master Plan for more information. This includes, but is not limited to:

- Bus bays
- Sidewalk widths at bus stops (to meet ADA requirements)
- Presence of amenities such as shelters, benches, trash receptacles, and shade
- Lighting at bus stops
- Pedestrian crossings at signalized intersections
- Transfer opportunities between nearby stations
- Any improvements that reduce transit delays

4.2-6 Other Topics

As appropriate for the project, the City may require analysis or other multimodal operations topics. These may include traffic control measures to accommodate travel during construction in cases of long-term closures of facilities and passenger or commercial loading plans. More detail requirements for these topics will be determined on a case-by-case basis by the City.

4.3 SITE PLAN ASSESSMENT

Site plan review presents an opportunity to address internal circulation and site access along with the transportation network analysis defined in the vehicle operations and multimodal operations in the above sections. All projects should include speed control measures within the project site to maintain appropriate vehicle speeds within driveways and parking lots and foster comfortable pedestrian environments. The site design should provide access for pedestrians and people

riding bicycles through parking lots, driveways, cul-de-sacs or dead-end roads where feasible to enhance multimodal connectivity. Similarly, the project design and proposed operations should be compatible with and supportive of public transportation facility access and operations, taking passenger drop-off locations and bus loading into considerations. The applicant will submit site plans for review by the City that should adhere to the multimodal access priorities noted above, and the design standards outlined below.

4.3-1 Parking Stall Dimensions

Parking stalls should conform with the Hayward Municipal Code 10-2.602; see code for standards and dimensions.

4.3-2 Parking Layout

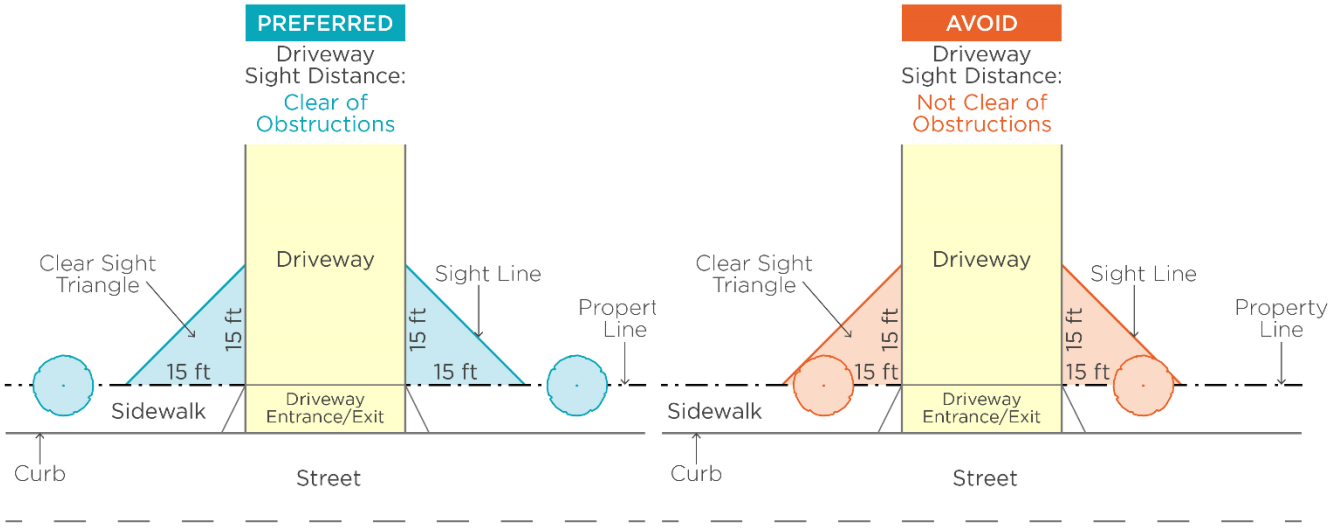
Off-street parking layout should conform with the Hayward Municipal Code Chapter 10.2.6: Design Standards for Parking and Loading Spaces; see code for standards and dimensions.

4.3-3 Driveway Sight Distance

To ensure safe driveway egress, the project consultant shall provide graphics of sight triangles for streets intersecting all driveways. An example graphics is shown in Figure 17. Sight triangles shall be based on Highway Design Manual stopping distances. Measures to improve visibility will be required.

The consultant shall also assess visibility of pedestrians walking along a sidewalk to drivers exiting a driveway. Measures including mirrors, warning devices, and/or relocation of obstructions will be required.

Figure 17 Driveway Sight Distance Triangle Example



4.3-4 Internal Bicycle and Pedestrian Circulation

An evaluation of bicycle and pedestrian circulation within the project site will be performed to confirm the project design supports multimodal transportation and complete streets.[5] The site plan will detail bicycle, pedestrian, and automobile circulation within the site, and illustrate a system design that encourages bicycle and pedestrian use through ease of access. The site plan design will minimize or eliminate existing obstacles in the built environment that inhibit bicycle and pedestrian travel. The design will provide access for pedestrians and people riding bicycles through cul-de-sacs or dead-end roads.

Project design to indicate internal bicycle circulation network including bicycle access from on-street facilities. Bicycle access and clear direction to bicycle parking facilities must be provided. Detailed information for bicycle parking facilities covered **section 4.21**.

Project design to indicate internal pedestrian circulation network, including pedestrian pathways (paseos) that provide pedestrian circulation within the site and connections to entrances from local facilities including but not limited to, sidewalks, off-street paths, transit stops, and passenger loading zones.

4.3-5 Fire Safety and Solid Waste Geometric Design Requirements

All projects should be designed to meet minimum Fire Safety and Solid Waste access standards.

4.3-6 Bicycle Parking

Bicycle parking proposed as part of the project is required to meet the Bicycle Parking Design Standards described in the City of Hayward Bicycle and Pedestrian Master Plan[6]. Bicycle parking elements not meeting standards are required to be upgraded to meet or exceed established standards of design, ease of use, materials, and finishes.

Projects are required to provide short term and/or long-term bicycle parking depending on the land use and size of the project. ***Short term bicycle parking*** is defined as bicycle racks designed to serve visitors who leave their bikes for relatively short periods of time, typically for shopping, errands, eating or recreation. ***Long term bicycle parking*** is defined as bicycle lockers, indoor bicycle storage, or similar facilities protected from the weather and with a higher degree of security designed to serve people who leave their bikes for longer periods of times such as commuters, residents, and transit users.

Section 10-2.406 of the City's Municipal Code requires bicycle parking only for land uses where more than 50 vehicle parking spaces are required. There is a credit system in place by which four bicycle spaces provided can provide credit for one vehicle parking space. The amount of short term and/or long-term bicycle parking a project is required to provide is set forth in the City of Hayward Municipal Code 10-28.3.2.020, Bicycle Parking Standards shown in Figure 18**.** below. Quantity of bicycle parking provisions are based on the designated land use of the project, and number of housing units or required automobile parking spaces.

[6] City of Hayward Bicycle and Pedestrian Master Plan

Figure 18 Bicycle Parking Standards[7]

Use Type	Required Short-Term Spaces	Required Long-Term Spaces	Location
Multi-Family Residential	1 per 10 units	1 per 4 units 1	Either within the building or within 25 feet of the building entrance
Recreation, Civic, Education, Entertainment, and Assembly; Office and Service Uses; Retail and Food Uses 2	4 spaces or 20% of required off-street automobile parking spaces, whichever is greater (up to a maximum of 10 bicycle spaces)	1 for every 10 automobile spaces, minimum 2 spaces.	Within 50 feet of public entrance of the building and adjacent to a bicycle path and/or pedestrian walks
1 No long-term bike parking required if units have private garages.			
2 At the discretion of the Director, required bicycle parking may be provided within the public right-of-way.			

Bicycle parking design should refer to guidance from the Association of Pedestrian and Bicycle Professionals (APBP) who provide recommendations in their Bicycle Parking Guidelines.[8] The Bicycle Parking Guidelines define acceptable and preferred standards for bicycle parking dimensions and products. Bicycle parking in the proposed project will adhere to City and APBP Guidelines in the final product. Bicycle parking racks are required to support a bicycle in at least two points, allow the user to lock the frame and one or both wheels with a U-lock, are securely anchored to the ground, and will resist cutting, rusting and bending or deformation.

Short-term bicycle parking on the project site to be designed free of barriers to access and near the primary entrance. Barriers can include but are not limited to a change in floor levels, gates and doorways opened manually, narrow pathways shared with pedestrians, and merging lanes with vehicles. Long-term bicycle parking can be behind doorways but should be as close to the main entrance as feasible and well-lit. Bicycle parking racks should have sufficient access space to accommodate electric, cargo, and family bikes where feasible. Existing and planned on-street bicycle facilities are to be reflected in the placement of on-site bicycle parking facilities through connection and ease of access. Signage and lighting along bicycle routes to provide clear direction toward safe and secure parking facilities may be required.

Consultants should provide a table with bicycle parking calculations and show locations of proposed bicycle parking, including dimensions illustrating that setbacks and clearances are met, on the project plans.

[7] Hayward Municipal Code 10-28.3.2.020, https://library.municode.com/ca/hayward/codes/municipal_code?nodeId=HAYWARD_MUNICIPAL_CODE_CH10PLZOSU_ART28DECO_ART10-28.3SUZO_DIV10-28.3.2GEST_10-28.3.2.020PALO

[8] APBP Bicycle Parking Guidelines Executive Summary

Appendix A VMT Mitigation Measures

The tables below show the Mobility Management Tool's VMT reduction measures under consideration by Alameda CTC for inclusion in their VMT Calculator. The first table presents the project and site level mitigations and the second table presents the community and city level mitigations. A summary description of each measure and the highest reduction percentage possible are provided, and different reduction measures are listed for each land use category where SANDAG considers that input (this only applies to project/site level applications).

Figure 19 Mobility Management VMT Reduction Measures for Project/Site Level Application

Category	Measure	Description	Maximum Reduction (by land use where applicable)
Employer Commute Programs	1A. Voluntary Employer Commute Program	▪ Employer offers a voluntary employer commute trip-reduction program ▪ May include a carpool or vanpool program, subsidized or discounted transit passes, bike amenities, commute trip-reduction marketing, and preferential parking permit program. ▪ Encompasses strategies 1C (Employer Carpool Program), 1D (Employer Transit Pass Subsidy), and 1E (Employer Vanpool Program) and cannot be analyzed in combination with these strategies. ▪ Unlike strategy 1B (Mandatory Employer Commute Program), this strategy does not require monitoring, reporting, or performance standards. If this strategy is selected, strategy 1B cannot be analyzed as part of the total VMT reduction.	▪ Low-density suburb: 6.2% ▪ Suburban center: 5.4% ▪ Urban: 5.2%
	1B. Mandatory Employer Commute Program	▪ Employer offers a mandatory employer commute trip-reduction program. ▪ May include a carpool or vanpool program, subsidized or discounted transit passes, bike amenities, encouragement for telecommuting and alternative work schedules, commute trip-reduction marketing, and preferential parking permit program. ▪ This strategy encompasses strategies 1C, 1D, and 1E and cannot be analyzed in combination with these strategies. Unlike strategy 1A (Voluntary Employer Commute Program), this strategy would be contractually required of the developer or property owner and is accompanied by a regular performance-monitoring and reporting program. If this strategy is selected, strategy 1A cannot be analyzed as part of the total VMT reduction.	26%
	1C. Employer Carpool Program	Employers can encourage carpooling by providing ridematching assistance to employees, providing priority parking for carshare vehicles, and providing incentives for carpooling.	▪ Low-density suburb: 3% ▪ Suburban center: 5% ▪ Urban: 8%
	1D. Employer Transit Pass Subsidy	Employers can encourage employees to take transit by providing subsidized or discounted daily or monthly public transit passes to employees.	Reduction varies by amount of subsidy ▪ Low-density suburb: 0.1-0.6% ▪ Suburban center: 1.1-5.8%

			▪ Urban: 2.2-10.9%
	1E. Employer Vanpool Program	▪ Vanpooling is a flexible form of public transportation that provides groups of 5–15 people with a cost-effective and convenient rideshare option for commuting, ▪ An employer can encourage ridesharing by subsidizing vanpooling for employees who have a similar origin and destination and by providing priority parking for employees who vanpool.	7.1%
	1F. Employer Telework Program	▪ A telework program enables employees to work from home or a remote location one or more days per week. ▪ Depending on the nature of the work, schedules can range from full-time, specific days of the week, or as needed. ▪ The VMT impacts of telework are similar to a flexible work schedule program, which enables employees to work long hours in exchange for one day off every week or two.	44% (maximum, but not typical)
Land Use Strategies	2A. Transit Oriented Development	▪ Transit Oriented Development (TOD) refers to projects built in compact, walkable areas that have easy access to public transit, ideally in a location with a mix of uses, including housing, retail, offices, and community facilities. ▪ TODs are generally described as places within a 10-minute walk of a high-frequency rail transit station (BART) ▪ They should, at a minimum, incorporate bike and pedestrian access to transit, thereby encouraging transit use and reducing vehicle travel.	14.4%
	2B. Mixed Use Development	▪ Mixed use projects incorporate a range of complementary land uses that provide a balanced development approach relative to the surrounding neighborhood and encourage transportation alternatives. This could include co-location residential development, office space, retail shops, and others. ▪ Land use mix is measured using an entropy index. An index of 0 indicates a single land use while an index of 1 indicates equal distribution of all land uses. For ease of use, the strategy is calculated using only two land use types - residential (number of residents) and commercial (number of jobs).	30%
Parking Management	3A. Parking Pricing	▪ Priced parking can be implemented on- or off-street and helps to effectively manage the parking supply. ▪ Priced parking works best in areas where on-street parking is managed (e.g., priced parking, residential permit programs, time limits, etc.) to reduce unintended consequences of parking in adjacent neighborhoods.	7.5%
	3B. Parking Cash Out	▪ Employers can offer employees who are provided free parking the option to take the cash value of the space in lieu of the space itself. ▪ California state law (AB 2109, Katz) requires that certain employers who provide subsidized parking for their employees offer a cash allowance in lieu of a parking space. ▪ This strategy is only applicable where employers pay for or rent parking for their employees. ▪ Parking cash-out is most successful when paired with incentives or programs that encourage the use of transportation alternatives.	12%

Figure 20 Mobility Management VMT Reduction Measures for Community/City-Level Application

Category	Measure	Description	Reduction
Neighborhood Enhancements	4A. Street Connectivity Improvement	▪ A connected and complete street network improves accessibility, safety, and livability of the community. ▪ Traditional grid street patterns with short blocks offer a high degree of connectivity compared to street networks with curvilinear designs and cul-de-sacs. This strategy uses intersection density as a proxy for street connectivity improvements, which help to facilitate a greater number of short trips.	6%

		▪ Example projects that increase intersection density would be building a new street network in a subdivision or retrofitting an existing street network to improve connectivity (e.g. cul-de-sacs converted to grid streets).	
	4B. Pedestrian Facility Improvement	▪ Enhancing pedestrian facilities (e.g. streetscape and pedestrian crossing improvements) within the jurisdiction or community helps to encourage walking and reduce the reliance on the single occupancy vehicle. ▪ This strategy applies to sidewalk enhancements that improve the existing streetscape and is not inclusive of greenfield developments with new roadways.	1.4%
	4C. Bikeway Network Expansion	▪ A bikeway network includes an interconnected system of bike lanes, bike paths, and cycle tracks (Class I, Class II, and Class IV facilities). ▪ Bike facilities may share the roadway with vehicles or provide a dedicated pathway that separates bikes from cars or pedestrians. Increasing the network of bike facilities help to encourage biking as a safe and convenient alternative to driving. ▪ If this strategy is selected, strategy 4D (Bike Facility Improvement) cannot be analyzed as part of the total VMT reduction.	5%
	4D. Bike Facility Improvement	▪ If a comprehensive bikeway network expansion (strategy 4C) is not feasible, the addition of a single bike lane (Class II), bike path (Class I), or protected bikeway (Class IV) to an existing bikeway network helps to improve biking conditions within an area. ▪ Class I facilities are bike paths that are physically separated from motor vehicle traffic. Class II facilities are striped bicycle lanes that provide exclusive use to bicycles on a roadway. ▪ Class IV facilities are protected on-street bikeways, also called cycle tracks. Consider local or state bike width standards when implementing facility improvements. ▪ If this strategy is selected, strategy 4C (Bikeway Network Expansion) cannot be analyzed as part of the total VMT reduction.	0.3%
	4E. Bikeshare	▪ Bikeshare programs help to reduce traffic congestion and demand for parking by providing users with on-demand access to bikes for short-term rental. ▪ Bikeshare systems that feature electrified vehicles (scooters, e-bikes) help increase the range of the bike trip, making these services convenient and attractive to users. ▪ Providing discounted bikeshare memberships or dedicated bikeshare parking can encourage users and improve the user experience.	0.1%
	4F. Carshare	▪ Carsharing offers people with convenient access to a vehicle for personal or commuting purposes. ▪ Carsharing helps to encourage transportation alternatives by reducing vehicle ownership. ▪ Roundtrip carshare providers require members to return the vehicle to a designated location. One-way carshare (i.e., free-floating) providers allow members to pick up the vehicle in one place and end their trip in another. ▪ Discounted carshare memberships and priority parking for carsharing vehicles help to encourage use of carsharing services.	0.7%
	4G. Community-Based Travel Planning	▪ Community-based travel planning (CBTP) is a residential-based approach to outreach that provides households with customized information, incentives and support to encourage the use of transportation alternatives. ▪ The approach involves a team of trained 'Travel Advisors' engaging residents at home or in their communities to offer information, incentives, and advice about how members of households can travel in alternative ways that meet their needs.	2%

		▪ Teams of trained Travel Advisors visit all households within a targeted geographic area, have tailored conversations about residents' travel needs, and educate residents about the various transportation options available to them. ▪ Due to the personalized outreach method, communities are typically targeted in phases.	
Transit Strategies	5A. Transit Service Expansion	▪ Expanding the transit network increases the transit system's ability to accommodate existing and future travel demand, particularly for peak period commute trips. ▪ This strategy provides an effective alternative to congested freeways and roadways for travelers and can reduce vehicle miles traveled by increasing transit ridership. ▪ Transit network service improvements should be coordinated closely with the operating transit agency.	5.9%
	5B. Transit Frequency Improvements	▪ Transit frequency improvements can be implemented system-wide or on individual routes. ▪ Frequency improvements increase transit ridership by reducing travel times, which improve the user experience and increase the attractiveness of transit service. ▪ Transit network service improvements should be coordinated closely with the operating transit agency.	8.2%
	5C. Transit-Supportive Treatments	▪ Roadway infrastructure and/or traffic signal modifications can improve transit travel times and reliability, leading to mode shift to transit. ▪ Treatments can include transit signal priority, bus-only signal phases, queue jumps, curb extensions to speed passenger loading, and dedicated bus lanes. ▪ Transit-supportive treatments should be coordinated closely with the operating transit agency.	0.4%
	5D. Transit Fare Reduction	▪ Transit pricing strategies are designed to reduce the costs associated with using transit, thereby creating incentives for people to shift from other traveling modes. ▪ Fare reductions can be implemented system-wide, in specific fare-free or reduced fare zones. ▪ This strategy varies from Employer Transit Pass Subsidy (Strategy 1D) which can be offered through employer-based benefits programs in which the employer fully or partially pays the employee's cost of transit.	1.2%
	5E. Microtransit NEV Shuttle	▪ Microtransit services utilize real-time ride-hailing, mobile tracking and app-based payment to provide demand-based service to users. ▪ Microtransit services are flexible and can be designed to fulfill the mobility needs of a community. ▪ Neighborhood electric vehicles (NEVs) are a type of microtransit service that operate within a defined service area and fulfill trips that are short distance in nature, typically less than two miles long. ▪ NEVs help to facilitate connections to and from transit stations and provide users with an alternative to driving for short trips.	0.1%

In addition to the measures identified by SANDAG, the following measures listed in Figure 21 can be proposed by a project applicant if the VMT reductions in the VMT calculator are insufficient to reduce Project VMT below the threshold. The Land Use Strategies and Parking Management measures listed in the following table are currently used by the City of San José.

Figure 21 Additional VMT Reduction Measures

Category	Measure	Description	Maximum Reduction	Source
TDM Measures (residential)	Transit Pass for Residents	Provide units with one free transit pass to AC transit or a Clipper card with monthly funds to use on BART and other agencies (can paid for with unbundled, priced parking).	10%	CAPCOA
	School Pool (Community or city level)	This strategy creates a ridesharing program for school children. It helps match parents to transport students to private schools, or to schools where students cannot walk or bike but do not meet the requirements for bussing.	8%	CAPCOA
	Voluntary TDM Marketing	Implement marketing strategies to reduce VMT, which may include new resident information materials of alternative mode options, event promotions and publications.	4%	CAPCOA
	Multi-family Residential Coworking Space (Telework)	Encourage teleworking for residents by providing a shared space with high-speed internet, desks, and private meeting rooms to facilitate working from home.	2.25%	CAPCOA
Land Use Strategies	Increase Residential Density	Design the Project with increased residential densities compared to existing conditions in the surrounding area. Increased densities affect the distances people travel and provide greater options for the mode of travel they choose.	30%	San José's VMT Evaluation Tool
	Increase Employment Density	Design the Project with increased employment densities compared to existing conditions in the surrounding area. Increased densities affect the distances people travel and provide greater options for the mode of travel they choose.	30%	San José's VMT Evaluation Tool
	Include Below Market Rate Housing	Develop on-site deed-restricted affordable, below-market rate (BMR) housing, for low-income households to reside in the Project. At the same site, households with incomes at or below 80% of the regional median income generally make fewer trips by automobile than households with higher incomes, resulting in reduced VMT. BMR housing provides greater opportunity for families to live closer to transit.	32.5%	San José's VMT Evaluation Tool
Parking Management	Parking Supply Reduction	Reduce parking supply to encourage "smart growth" development and alternative transportation choices by project residents and employees. Requires a way to address parking off-site through on-street parking management or other means such as lack of nearby on-street parking supply.	12.5%	San José's VMT Evaluation Tool