

Memorandum

Date: April 29, 2024
To: Charles Bergson and Stacy Elms, City of Los Banos
From: Ian Barnes, PE and Grace Chen, Fehr & Peers
Subject: **City of Los Banos Transportation Impact Analysis Guidelines**

WC23-3972

The purpose of these Transportation Impact Analysis (TIA) Guidelines is to establish general procedures and requirements for the preparation of transportation impact studies for development projects within the City of Los Banos. Generally, a TIA will be required to satisfy CEQA review of a proposed project. The City's General Plan requires full traffic operational analyses for all proposed new developments that will generate 100 or more peak hour trips in either the weekday AM peak hour, weekday PM peak hour, or other peak hour/period at the discretion of City staff. Additionally, operational analysis of projects generating less than 100 peak hour trips may be required at the discretion of City staff. These guidelines cover the requirements for both non-CEQA and CEQA transportation impact assessments.

Operational Assessment (Non-CEQA)

This section includes the requirements for the non-CEQA operational assessment of projects. The operational assessment includes a review of (1) multimodal site access and circulation and (2) off-site Level of Service analysis.

Multimodal Site Access and Circulation

A detailed multimodal site access and circulation plan review is required for all projects. At a minimum, the site plan review should include review of:

- Site access and interface with public roadway network including adequacy of turn-pocket lengths, driveway throat lengths, sight distance, and intersection operations
- Emergency vehicle access and circulation
- Vehicular circulation within the site



- Pedestrian and bicycle access and circulation within and adjacent to the site
- Proximity to and access to/from public transit
- Adequacy of vehicle and bicycle parking per City Code

Level of Service (LOS) Analysis

Although not a CEQA metric, intersection levels of service (LOS) are required to be assessed in a TIA for General Plan goal and policy compliance and to identify potential transportation improvements that could be implemented as part of the project to improve the overall operations of the transportation system for all travel modes. The City of Los Banos General Plan requires that segments operate at LOS C or better and that intersections operate at LOS D or better for the weekday morning and afternoon peak hours of travel on all major roadways and intersections in the City.

The TIA should provide a qualitative evaluation of the project's potential adverse or beneficial effects on transportation facilities and services related to pedestrians, bicycles, and transit access and operations. The traffic analysis must recommend appropriate treatments for the transportation system to offset operational deficiencies that are found to have exceeded operational standards for the City of Los Banos.

Study Intersections

All signalized, roundabout or stop-controlled intersections to which the project would add 50 or more peak hour trips should be studied; focus should be paid to arterial-arterial, arterial-collector, arterial-local, and collector-local intersections. Additional study intersections may be selected after City staff has reviewed the trip generation, distribution, and assignment of a proposed project.

Data Collection

Two-hour morning (generally, 7:00 AM to 9:00 AM) and two-hour afternoon (generally, 4:00 PM to 6:00 PM) peak period transportation counts of vehicles, pedestrians, and bicyclists are required for all study intersections. Two-hour school dismissal peak period (generally, 2:00 PM to 4:00 PM) counts may be required at the discretion of City staff. Counts are valid for up to two years, at the discretion of City staff.

Counts shall be recorded at 5-minute or 15-minute intervals, tallied by turning movement for vehicles, heavy vehicles, and bicyclists, and by crossing leg for pedestrians. The peak hour is defined as the highest 60-minute period for each count period.

Counts should be collected during fair weather, on a Tuesday, Wednesday, or Thursday of a non-holiday week when schools are in session, and when no major road closures, construction, or



incidents occur. The transportation consultant should observe each study intersection during peak periods of analysis and document their field observations to confirm that operations models reflect observed operating conditions.

Methodologies

Unless directed otherwise by the City, the method used for evaluating LOS at signalized and unsignalized intersections shall be the method defined in the latest version of the Transportation Research Board's *Highway Capacity Manual* (HCM). The average delay for signalized and stop-controlled intersections should be calculated using the latest version of Synchro analysis software; side-street stop-controlled intersections should be analyzed for the worst approach (single-lane approach) or movement (multi-lane approach). Roundabout intersections should be analyzed using the latest version of the SIDRA software. Roadway segments should be evaluated using the latest edition of the Highway Capacity Software (HCS) program.

Analysis Scenarios

The transportation operations analysis shall include, as a minimum, consideration of the following scenarios. Unless otherwise directed by the City, Cumulative forecasts should be developed using the latest available Los Banos version of the Merced County Association of Governments Merced County (MCAG) travel demand model:

- Existing Conditions
- Existing Plus Project Conditions
- Near-Term (Existing Plus Approved Projects) Conditions¹
- Near-Term Plus Project Conditions
- Cumulative Conditions
- Cumulative Plus Project Conditions

Project Assessment

The TIA should include a detailed description of the project, including factors which quantify traffic generation (e.g., dwelling units, square feet of office space, persons to be employed, restaurant seats). A detailed site plan shall be provided that includes access, circulation, parking, and loading as applicable.

Trip Generation

Trip generation estimates shall be developed using the latest version of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*. Trips should be calculated using the weighted average rates or rates from the regression equations as determined according to the

¹ To be required at the discretion of City staff.



guidelines in the ITE *Trip Generation Manual*. Other trip generation rates may be approved by the City due to the unique characteristics of a proposed project, such as mixed-use developments evaluated under the NCHRP/EPA MXD+ methodologies.

Trip Distribution and Assignment

Project trip distribution refers to the directions of approach and departure that vehicles would take to access and leave the site. A figure illustrating the percentage of peak hour project-generated traffic going to and from various destinations along the transportation network shall be included in the TIA. Trip distribution shall be based on the proposed land use, existing travel patterns, site access to major corridors, relative locations of complementary land uses, and model data from the MCAG travel demand model.

Trips should then be manually assigned to the road network according to the trip distribution. The travel demand model should not be relied on for project trip assignment. A figure illustrating the assignment of peak hour project-only trips at the driveways, study intersections, and roadway segments based on the trip distribution shall be included in the TIA. If the trip distribution is different between existing, near-term, and cumulative conditions, a figure shall be provided for each different trip distribution and/or assignment with supporting discussion and justification.

Substantial Intersection Effect Criteria

CEQA impacts on the basis of LOS are automatically considered less-than-significant under Senate Bill 743. The following substantial intersection effect criteria are used to determine if the project shall sponsor improvements at study intersections due to the effect of project-added traffic at the intersection.

Signalized Intersections

- For intersections operating at an acceptable LOS, Project-related traffic causes the LOS rating to deteriorate from LOS D or better to LOS E or F.
- For intersections already operating at an unacceptable LOS without the Project it is considered a deficiency if the Project increases the average intersection delay by five or more seconds.

Unsignalized Intersections

- The addition of Project traffic causes an unsignalized intersection to deteriorate from LOS D or better to LOS E or F overall or the worst-case movement. The peak hour signal warrant (Warrant 3) must be met.
- For unsignalized intersections already operating at an LOS E or F prior to the addition of Project traffic, the Project increases delay (worst approach/movement for side-street stop-



control, and whole intersection delay for all-way stop-control and roundabouts) by five or more seconds. The peak hour signal warrant (Warrant 3) must be met.

CEQA Assessments

When discretionary action is taken on a project, CEQA Transportation analysis is typically required. In those instances, projects are required to prepare study elements to address CEQA criteria in addition to elements of a local transportation study. Most notable is the requirement to prepare a vehicle-miles of travel (VMT) assessment, as well as assess a project's consistency with adopted plans, potential to increase hazards due to a geometric design feature, or result in inadequate emergency access.

CEQA Vehicle-Miles of Travel (VMT) Analysis

The most recent CEQA Guidelines and OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA* (2018) recommend VMT as the most appropriate measure of project CEQA Transportation impacts.

VMT Thresholds of Significance

The following are CEQA thresholds of significance related to VMT. If the thresholds of significance are exceeded, mitigation measures and monitoring are required to alleviate the significant impact.

- For residential projects: a project would result in a significant impact if the project has a home-based VMT per resident that is 85% or more of the baseline² citywide average.
- For employment-focused projects (office/industrial): a project would result in a significant impact if the project has a home-based work ("commute") VMT per employee that is 85% or more of the baseline Merced County-wide average.
- For retail and other goods/services project: a project would result in a significant impact if the project effect on VMT results in a net increase in VMT within the area of influence of the project.

The VMT analysis principles in the OPR *Technical Advisory* should be used to develop analysis methodologies and significance thresholds for other types of projects (e.g. the employment portion of a hotel project should be analyzed using the employment threshold, and the visitor portion of a hotel project should be analyzed using the goods/services threshold). The VMT

² Baseline is defined as when the Notice of Preparation for the CEQA analysis is released. Baseline is not defined by the base year of the MCAG travel demand model. Interpolation between the base year and future year for the MCAG travel demand model may be used to develop baseline VMT information.



analysis shall not artificially truncate the VMT calculation at political or other artificial boundaries, per the OPR *Technical Advisory*.

Project VMT Screening

Screening criteria per OPR *Technical Advisory* may be used to identify the types, characteristics, and/or locations of land use projects that would not exceed VMT thresholds of significance. If a project, or components of the project, meet any of the screening criteria, then it may be presumed that VMT impacts would be less than significant for the project/component, and a detailed VMT analysis is not required for the CEQA Transportation section. VMT analysis may still be required as in input to CEQA Greenhouse Gas, Air Quality, and Energy section analyses.

It is noted that City staff may deny the use of screening criteria if substantial evidence suggests that the project is not appropriate for screening.

VMT Assessment for Non-Screened Development

Projects not screened through the steps above should complete a VMT analysis and forecasting through the MCAG model to determine if they have a significant VMT impact. This analysis shall include "projected generated VMT" and "project effect VMT" estimates for the project TAZ(s) under the following scenarios:

- Baseline Conditions
- Baseline Plus Project Conditions
- Cumulative No Project Conditions
- Cumulative Plus Project Conditions

VMT Mitigation Measures

To mitigate VMT impacts, the following general choices are available to projects:

- Modify the project's design features and/or land uses to reduce project trips or reduce trip length.
- Moving the proposed development to a more travel-efficient area (i.e. area with access to high quality transit, or other transportation solutions that reduce the length/number of trips).
- Implement Transportation Demand Management (TDM) measures to reduce VMT generated by the project.

Proposed projects shall utilize the latest version of the [California Air Pollution Control Officers Association \("CAPCOA"\) mitigation measure handbook document](#)³ to estimate the feasible amount of VMT mitigation. The [TDM+ tool](#) is available for use free of charge to calculate VMT

³ Current version of the most up to date handbook as of August 22, 2023.



mitigation. Analysts must demonstrate the applicability of the VMT reductions within the transportation context of the site and project (e.g. connecting transit, parking supply provided, etc.) to ensure that the VMT reduction is reasonable. Analysts are strongly cautioned to ensure that double-counting of VMT reduction benefits does not occur given that the MCAG model is sensitive to development variables such as density and mode split associated with proximity to compatible uses.

Other Environmental Considerations

As noted above, the updated CEQA Guidelines Appendix G Checklist contains three additional criteria beyond the VMT evaluation criteria discussed in preceding sections. These checklist questions include:

Would the project:

1. *Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*
3. *Substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?*
4. *Result in inadequate emergency access?*

TIAAs should address these three questions, considering the unique characteristics of the project, including its location, size, design, use mix, transportation and urban form context, and other relevant details. In the assessment of transit, bicycle and pedestrian network, the following standards of significance shall be used.

Transit System

The project would create a significant impact related to transit service if the following criteria is met:

- The project interferes with existing transit facilities or precludes the construction of planned transit facilities.

Bicycle System

The project would create a significant impact related to the bicycle system if any of the following criteria are met:

- Disrupt existing bicycle facilities; or
- Interfere with planned bicycle facilities; or
- Create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards.



Pedestrian System

The project would create a significant impact related to the pedestrian system if any of the following criteria are met:

- Disrupt existing pedestrian facilities; or
- Interfere with planned pedestrian facilities; or
- Create inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards.