APPENDIX A

CITY OF LAKE FOREST
CEQA SIGNIFICANCE THRESHOLDS GUIDE

Published November 20, 2001
Revised May 6, 2025

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SECTION 1
INTRODUCTION

1.1 CEQA SIGNIFICANCE THRESHOLDS

The *City of Lake Forest CEQA Significance Thresholds Guide* has been prepared as an internal guidance document for City staff. The information presented herein shall be used by staff for the review of projects, and in the preparation of environmental documents pursuant to the California Environmental Quality Act (CEQA). CEQA requires the analysis of discretionary projects to disclose their potential effects on the environment.

As stated in Section 15064(a) of the State CEQA Guidelines, "Determining whether a project may have a significant effect plays a critical role in the CEQA process." The identification of significance of an impact determines the level of environmental review required and the need for mitigation measures to reduce or eliminate project impacts. The tools used by a lead agency to make significance determinations include but are not limited to: CEQA's Mandatory Findings of Significance, Appendix G of the CEQA Guidelines (the model Initial Study checklist), agency (e.g., South Coast Air Quality Management District, Governor's Office of Planning and Research) regulatory standards and guides, consultation with other agencies, and the lead agency's specific thresholds of significance. As defined in the CEQA Guidelines (Section 15064.7) "a threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant."

Section 15064(b)(1) of the State CEQA Guidelines states: "The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting." The *City of Lake Forest CEQA Significance Thresholds Guide* is a tool that compiles information that is useful in the preparation of environmental documents. This information can be used to improve the level of consistency, predictability, and objectivity of the City's environmental documents. The Guide provides assistance in evaluating the significance of project impacts for six key topical issues in the City of Lake Forest: circulation/transportation, noise, air quality, land use, aesthetics, and water resources. For each topical issue, the following information is provided: background information; discussion of relevant standards, planning guidelines, policies etc.; thresholds of significance; and potential mitigation. It should be noted that the mitigation measures suggested in this document are examples of the types of mitigation that could be applied to a project to reduce identified environmental impacts. The actual mitigation recommended for a project will vary depending on the project itself, the specific impact, and other issues that may arise on a case-by- case basis. It is not intended that each mitigation measure identified in this document be applied to every project or that the mitigation be written exactly as presented herein. Similarly, there may be mitigation required of a project that is not identified in this document.

The *City of Lake Forest CEQA Significance Thresholds Guide* provides guidance and does not require mandatory application of all thresholds for every project. The guidance provided in this document does not substitute for the use of independent judgment to determine significance or the evaluation of the evidence in the record but is intended to provide sufficient flexibility to use the most appropriate criteria (i.e., on a case-by-case basis) for a particular project. (See *Mejia v. City of Los Angeles* (2005) 130 Cal.App.4th 322; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099.) CEQA includes additional topics and requirements

that are not addressed in this *City of Lake Forest CEQA Significance Thresholds Guide*. Section 15064(b)(2) of the State CEQA Guidelines states: "Thresholds of significance, as defined in Section 15064.7(a), may assist lead agencies in determining whether a project may cause a significant impact. When using a threshold, the lead agency should briefly explain how compliance with the threshold means that the project's impacts are less than significant. Compliance with the threshold does not relieve a lead agency of the obligation to consider substantial evidence indicating that the project's environmental effects may still be significant." The lead agency is responsible for ensuring that all CEQA requirements are met.

1.2 CITY OF LAKE FOREST

The City of Lake Forest is located between the coastal floodplain and the Santa Ana Mountains. The western portion of the City is near sea level while the northeastern portion of the City becomes progressively higher and steeper, reaching elevations of up to 1,500 feet. The Santa Ana Mountains can be seen from various points within the City (including major roadways) while the Saddleback Valley floor and the Pacific Ocean can be seen from the higher elevations. The Recreation and Resources Element of the City of Lake Forest General Plan states that, "Lake Forest's recreational amenities and natural resources form an important part of its unique character and quality of life. In our community, these resources include the City's parks and trails, natural open space areas, scenic vistas, and cultural, and biological, resources. It is important to understand, document, and appreciate these resources so that these valuable pieces of the community can be preserved and protected for future generations."

Notable natural features in the City include the foothills of the Santa Ana Mountains and natural water courses. The Whiting Ranch Wilderness Park is a prominent visual feature in the northern portion of the City located generally between the planned communities of Portola Hills and Foothill Ranch. There are five water courses that traverse the City: Aliso Creek, Serrano Creek, Borrego Canyon Wash, and two smaller creeks. While portions of these creeks are channelized for flood control purposes, significant portions of Aliso Creek and Serrano Creek include trails and open space and have a natural/undeveloped character. The City of Lake Forest also has four man-made lakes, three located within residential developments and one in Veterans Park.

The City developed as a series of primarily residential Planned Communities. Development within each Planned Community is designed to be compatible and form a consistent visual image. In older areas of the City, particularly near I-5, residential neighborhoods were not developed as part of Planned Communities and have less architectural and visual consistency.

Low-scale (one- to three-story) commercial development is concentrated near I-5 and along the primary arterials of El Toro Road, Lake Forest Drive, Bake Parkway and Portola Parkway. Existing sources of night lighting within the City include commercial districts, parking areas, outdoor sports facilities, and roadways.

1.3 SUMMARY OF SIGNIFICANCE THRESHOLDS

The following provides a summary of the thresholds of significance presented in Sections 2 through 7 of this document.

Circulation/Transportation

A proposed project would normally have a significant impact if it is determined to:

- Not meet any of the screening criteria described in Attachment 1 to this CEQA Significance Threshold Guide – *City of Lake Forest Transportation Analysis Guidelines*; and

- Exceed any of the vehicle miles traveled (VMT) thresholds described in Attachment 1 to this CEQA Significance Threshold Guide – *City of Lake Forest Transportation Analysis Guidelines;* and/or
- Conflict with program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities; and/or
- Includes design features or uses that may cause traffic hazards such as sharp curves, tight turning radii from streets, limited roadway visibility, short merging lanes, uneven road grades, or any other conditions determined by the City traffic engineer to be a hazard; and/or
- Results in inadequate emergency access.

NOISE

Traffic Noise

A proposed project would normally have a significant offsite traffic noise impact if one of the following criteria are met:

- When existing noise levels are between 60 dBA and 65 dBA CNEL, a 3 dBA CNEL increase in noise will be considered significant;
- When existing noise levels exceed 65 dBA CNEL, a 1.5 dBA CNEL increase in noise will be considered significant.

Stationary Noise

The project would normally have a significant stationary noise impact if it would:

- Exceed the stationary source noise criteria for the City of Lake Forest as specified by the exterior noise standards set forth in the Noise Control Chapter (11.16) of the Lake Forest Municipal Code.

Construction Noise

The project would normally have a significant construction noise impact if it would:

- Exceed 80 dBA Leq(1-hour) between the hours of 7:00 a.m. and 8:00 p.m., Monday through Saturday.[1]

Vibration

The project would normally have a significant vibration impact if it would:

- Exceed the applicable standards from the Federal Transit Administration (FTA) or Caltrans vibration limits.

[1] Construction is prohibited between 8:00 p.m. and 7:00 a.m., Monday through Saturday, or at any time on Sunday or a City holiday.

AIR QUALITY

Appendix G, Section III of the Environmental Checklist Form in the State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make determinations regarding air quality impacts. A project would normally have a significant impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan.

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation. The SCAQMD construction and operational emission thresholds identified in Table 4-3 are used for this assessment.

TABLE 4-3
SCAQMD EMISSIONEMISSION THRESHOLDS

Emission Thresholds of Significance		
Pollutant	**Construction pounds/day**	**Operation pounds/day**
Nitrous Oxides (NO_x)	100	55
Volatile Organic Compounds (VOC)	75	55
Particulate Matter <10µg (PM10)	150	150
Particulate Matter <2.5µg (PM2.5)	55	55
Sulfur Oxides (SOx)	150	150
Carbon Monoxide (CO)	550	550
Lead (Pb)	3	3

Source: SCAQMD *CEQA Air Quality Handbook*, 1993 (As amended at http://www.aqmd.gov/ceqa/handbook/signthres.doc).

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including release in emissions which exceed quantitative thresholds for ozone precursors).

- Expose sensitive receptors to substantial pollutant concentrations. Methodologies established by SCAQMD for assessing local impacts, including but not limited to Local Significance Thresholds and thresholds for PM2.5 are used for this assessment.

- Create objectionable odors affecting a substantial number of people.

- A project will be considered to result in a cumulatively considerable net increase of any criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors) where the incremental effect of the project emissions, considered together with past, present, and reasonably anticipated further project emissions, increase the level of any criteria pollutant above the existing ambient level.

LAND USE

A project would normally have a significant land use impact if it would:

- Physically divide an established community.

- Substantially conflict with existing on-site or adjacent land use due to project-related significant unavoidable indirect effects (e.g., noise, aesthetics, etc,) that preclude use of the land as it was intended by the General Plan.

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, planned community, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

- Conflict with the Central and Coastal Natural Communities Conservation Program/Habitat Conservation Plan (NCCP/HCP) of which the City of Lake Forest is a participant.

AESTHETICS

A project would normally have a significant visual impact if any of the following occurs:

- A project will substantially damage scenic resources, including scenic vistas from public parks and views from designated scenic highways or arterial roadways.

- A project will create a new source of substantial night lighting that would result in "sky glow" (i.e. illumination of the night sky in urban areas) or "spill light" (i.e. light that falls outside of the area intended to be lighted) onto adjacent sensitive land uses.

- A project will create a new source of substantial glare which would adversely affect daytime visibility and/or views in the area.

- A project will substantially degrade the existing visual character or quality of the site and its surroundings where:

  - The project exceeds the allowed height or bulk regulations or exceeds the prevailing height and bulk of existing structures.

  - The project is proposed to have an architectural style or to use building materials that will be in vivid contrast to an adjacent development where that development had been constructed adhering to a common architectural style or theme;

  - The project is located on a visually prominent site and, due to its height, bulk, architecture or signage, will be in vivid contrast to the surrounding development or environment degrading the visual unity of the area.

  - A project would include unscreened outdoor uses or materials.

  - A project would result in the introduction of an architectural feature or building mass that conflicts with the character of the surrounding development.

WATER RESOURCES

<u>Surface Water and Flooding</u>

A project would normally have a significant impact if it would:

- Substantially alter the existing drainage pattern of the site or area, including through the

alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff above pre-development condition in a manner which would result in flooding on- or off-site.

- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems.
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
- Cause inundation by seiche, tsunami, or mudflow.
- Deposit sediment and debris materials within existing channels obstructing flows.
- Exceed the capacity of a channel and cause overflow during design storm conditions.

Groundwater

A project would normally have a significant impact if it would:

- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- Adversely change the rate, direction or flow of groundwater.
- Have an impact on groundwater that is inconsistent with a groundwater management plan prepared by the water agencies with the responsibility for groundwater management.

Water Quality

A project would normally have a significant impact if it would:

- Violate any water quality standards or waste discharge requirements.
- Cause a significant alteration of receiving water quality during or following construction.
- Substantially degrade groundwater quality.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
- Create or contribute runoff water which would generate substantial additional sources of polluted runoff.

- Substantially degrade water quality by discharge which affects the beneficial uses (i.e. swimming, fishing, etc.) of the receiving or downstream waters.

- Increase in any pollutant for which the receiving water body is already impaired as listed on the Clean Water Act Section 303(d) list.

SECTION 2
CIRCULATION/TRANSPORTATION

2.1 BACKGROUND

The environmental review process identifies a project's potential transportation impact.

Within CEQA, a project's effect on vehicle delay shall not constitute a significant transportation impact (Section 15064.3(a)). Thresholds for determining a Project's significant transportation impact shall be pursuant to section 15064.3 of the State CEQA Guidelines. The City's General Plan, the regional transportation plan/sustainable communities plan (RTP/SCS), the Municipal Code, and any other additional information may be used to the extent necessary to inform the City's analysis under State CEQA Guidelines section 15064.3.

Section 15064.3 of the State CEQA Guidelines provides as follows:

(a) Purpose. This section describes specific considerations for evaluating a project's transportation impacts. Generally, vehicle miles traveled is the most appropriate measure of transportation impacts. For the purposes of this section, "vehicle miles traveled" refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) below (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact.

(b) Criteria for Analyzing Transportation Impacts.

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

(2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.

(3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

(4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used

to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

(c) Applicability.

The provisions of this section shall apply prospectively as described in section 15007. A lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide.

The City of Lake Forest General Plan outlines goals and policies for the City related to circulation and the City's multimodal transportation system, which includes roadway, transit, bicycle, pedestrian and rail modes of travel. The General Plan also provides consistency with County plans, such as the County of Orange Master Plan of Arterial Highways (MPAH) and OCTA Congestion Management Plan (CMP). Parking, safety, goods movement are also addressed in the City's General Plan. Per the State CEQA Guidelines, a Project must not conflict with a program plan, ordinance, or policy, addressing the circulation system including transit, roadway, bicycle and pedestrian facilities. Therefore, a project's consistency with the General Plan, MPAH, and CMP shall be determined.

2.2 THRESHOLDS OF SIGNIFICANCE

Project-Specific

For the purpose of identifying a project's significant transportation impact, and where project-related mitigation is required, the following criteria have been established. A proposed project would normally have a significant circulation/traffic impact if the following criteria are met:

- The proposed project does not meet any of the screening criteria set forth in the City of Lake Forest Transportation Analysis Guidelines (See Appendix 2); and
- The proposed project exceeds the vehicle-miles of travel (VMT) thresholds of significance set forth in the City of Lake Forest Transportation Analysis Guidelines (See Appendix 2); and/or
- The proposed project conflicts with the General Plan or other applicable program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities; and/or
- The proposed project includes design features or uses that may cause traffic hazards such as sharp curves, tight turning radii from streets, limited roadway visibility, short merging lanes, uneven road grades, or any other conditions determined by the City traffic engineer to be a hazard; and/or
- Results in inadequate emergency access.

2.3 POTENTIAL MITIGATION

Mitigation measures that could be applied to a project to reduce a transportation impact are suggested in the Transportation Analysis Guidelines (See Appendix 2)

The actual mitigation recommended for a project will vary depending on the project itself, the specific impact, and other issues that may arise on a case-by-case basis. It is not intended that each mitigation measure identified in the Transportation Analysis Guidelines be applied to every project or that the mitigation be written exactly as presented therein. Similarly, there may be mitigation required of a project that is not

identified in this document.

2.4 REFERENCES

Title 14. Natural Resources. Division 6 California Natural Resources Agency. Chapter 3. Guidelines for the Implementation of the California Environmental Quality Act.

City of Lake Forest General Plan Mobility Element. Lake Forest General Plan, May 2020.
City of Lake Forest Municipal Code.
City of Lake Forest Transportation Analysis Guidelines.

SECTION 3 – NOISE

3.1 BACKGROUND

Potential noise and vibration impacts are commonly divided into two groups: short-term construction and long- term operational (stationary source and mobile vehicular noise). Short-term impacts are usually associated with noise and vibration generated by construction activities. Long-term impacts include effects on surrounding land uses generated by a project once it is operational, and those impacts which occur at a project site. Construction-related and operational noise and vibration impacts are addressed in this section.

Noise has been defined as unwanted sound, and it is known to have adverse effects on people. Based on these effects, criteria have been established to help protect public health and safety and prevent disruption of certain human activities. These criteria are based on such known impacts of noise on people as hearing loss, speech interference, sleep interference, physiological responses, and annoyance.

Most noise metrics use the A-weighted noise level to quantify noise impacts on humans. A-weighting is a frequency weighting that accounts for human sensitivity to different frequencies. When the A-scale is used, the decibel levels are represented by dBA (A-weighted decibels). The City of Lake Forest's noise standards are expressed in terms of dBA. On this scale, the range of human hearing extends from about 3 dBA to about 140 dBA. A 10 dBA increase is judged by most people as a doubling of the sound level. Generally, noise increases of less than three dB are not detectable by the human ear.

Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Noise from transportation activities (transportation corridors, major arterials, collector roadways, railroad, etc.) is the primary component of the noise environment in the City of Lake Forest. Noise generated by construction equipment, including trucks, graders, bulldozers, concrete mixers, pile drivers, and portable generators, can reach high levels. Noise levels from construction equipment generally range from 76 to 91 dBA for equipment powered by internal combustion engines, saws, and vibrating equipment, and from the mid-80s to more than 100 dBA for impact equipment. Excavation and grading activities typically represent the highest potential for noise impacts.

3.2 NOISE METRICS

To account for the fluctuation in noise levels over time, noise impacts are commonly evaluated using time-averaged noise levels. Two of the most used noise scales are the Equivalent Continuous Sound Level (LEQ) and the Community Noise Equivalent Level (CNEL).

LEQ is the sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. LEQ is the "energy" average noise level during the time period of the sample. LEQ can be measured for any time period but is typically measured for one hour. It is the energy sum of all the events and background noise levels that occur during that time period.

LMAX means the highest sound level measured during the measurement period.

CNEL is the predominant rating scale used in California for land use compatibility assessment. The CNEL scale represents a time weighted 24-hour average noise level based on the A-weighted decibel. "Time-weighted" means that noise that occurs during certain sensitive time periods is penalized in noise analyses. Noises occurring in the evening (7:00 p.m. to 10:00 p.m.) are penalized by 5 dBA and nighttime (10:00 p.m. to 7:00 a.m.) noises are penalized by 10 dBA. A

CNEL noise level may be reported as a "CNEL of 60 dBA," "60 dBA CNEL," or simply "60 CNEL."

3.3 APPLICABLE NOISE STANDARDS

The City of Lake Forest General Plan (Public Safety Element) and the Municipal Code (Chapter 11.16 – Noise Control) establish noise standards for the City.

PUBLIC SAFETY ELEMENT OF THE GENERAL PLAN

Table PS-1 of the Public Safety Element summarizes land use compatibility noise standards for various types of land uses (Table 3-1 below). As a result of the Supreme Court decision regarding the assessment of the environment's impacts on projects (California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD), 62 Cal. 4th 369 (No. S 213478) issued December 17, 2015), it is generally no longer the purview of the CEQA process to evaluate the impact of existing environmental conditions on any given project. As a result, while noise from existing sources is taken into account as part of the baseline, the direct effects of noise from nearby noise sources relative to land use compatibility of a future project is typically no longer a required topic for impact evaluation under CEQA. Generally, no determination of significance is required with the exception of new school projects, projects significantly affected by airport noise, and project's that would exacerbate existing conditions (i.e., projects that would have a significant operational impact that could expose on-site users to substantial noise). In the cases of these exceptions, the noise and land use compatibility standards from Table 3-1 should be used to evaluate the potential impact of surrounding noise sources on future sensitive project residents, workers, or users.

TABLE 3-1
LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENT[5, 6]

Land Use [1]	Outdoor Activity Areas [2, 3] Ldn, dBA	Interior Spaces	
		Ldn, dBA	Leq, dBA [4]
Residential	60	45	–
Motels/Hotels	65	45	–
Mixed-Use	65	45	–
Hospitals, Nursing Homes	60	45	–
Theaters, Auditoriums	–	–	35
Churches	60	–	40
Office Buildings	65	–	45
Schools, Libraries, Museums	70	–	45
Playgrounds, Neighborhood Parks	70	–	-
Industrial	75	–	45
Golf Courses, Water Recreation	70	–	–

1. Where a proposed use is not specifically listed, the use shall comply with the criteria for the most similar use as determined by the City.

2. Outdoor activity areas for residential development are considered to be the private exterior living area of single-family homes and the main common areas where people generally congregate for multi-family and residential components of mixed-use developments. Outdoor activity areas for non-residential developments are the common areas where people generally congregate, including community centers, pool areas, and outside lunch facilities. New multi-family developments and residential components of mixed-use developments with balconies or patios that are exposed to noise that exceeds the outdoor criteria in this table are required to provide occupancy disclosure notices to all future tenants regarding potential noise impacts.

3. In areas where it is not possible for a new project to reduce exterior noise levels to achieve the outdoor activity area criteria using a practical application of the best noise-reduction technology, as determined by a qualified acoustician, an increase of up to 5 dBA Ldn over the outdoor standard will be allowed provided that available exterior noise reduction measures have been implemented and interior noise levels are in compliance with this table

4. Determined for a typical operating hour during periods of use.

5. In accordance with Policy PS-6b, this table shall be used for land use compatibility noise criteria when making planning and development decisions. These criteria represent the acceptable noise level for new sensitive receptors. These criteria are not to be retroactively applied for existing uses. These criteria are also not generally intended for use as CEQA significance thresholds for noise generated by new projects to existing receptors; that purpose is achieved by compliance with Municipal Code standards.

6. Abbreviations: dB = decibel; Leq = equivalent noise level; Ldn = Day-Night Average Level NOISE ORDINANCE

The Noise Control Chapter (11.16) of the Lake Forest Municipal Code ("Noise Ordinance"), is designed to protect people from non-transportation (stationary) noise sources such as music, construction activity, machinery, and equipment such as air conditioners. The Noise Ordinance sets limits for stationary noise sources, depending on the type of land use that is receiving the noise. Table 3-2 lists the A-weighted noise level (dBA) limit for these sources. The ordinance applies different criteria during different time periods. The noise criteria are more stringent in late night and early morning hours and reflect a heightened sensitivity to noise during these time periods. For purposes of determining potential project impacts during environmental impact review processes pursuant to the California Environmental Quality Act ("CEQA"), the average hourly level (L_{eq}) standards shall be utilized unless all sources are impact in nature.

TABLE 3-2
CITY OF LAKE FOREST NOISE ORDINANCE EXTERIOR NOISE STANDARDS

Land Use	Noise Level (Leq, dBA)	Noise Level (Lmax, dBA)	Time Period
Residential in Residential Zones	60	80	7:00 a.m.–10:00 p.m.
	50	70	10:00 p.m.–7:00 a.m.
Residential Portion of Mixed-Use in Mixed-Use Zones	65	85	7:00 a.m.–10:00 p.m.
	50	70	10:00 p.m.–7:00 a.m.
Churches, Hospitals, and Schools in Residential and Mixed-Use Zones	65	85	All Hours
Churches, Hospitals, and Schools in Commercial and Industrial Zones	70	90	All Hours

Section 11.16.050 of the Noise Ordinance identifies specific activities that would be exempt from the provisions of the noise restrictions. Exempted activities include, but are not limited to, construction, repair, remodeling, and grading, provided that: (1) the City has issued a building permit, grading permit, or similar permit for such activities; (2) said activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. Monday through Saturday, or at any time on Sunday or a legal City of Lake Forest holiday; and (3) the average construction noise levels do not exceed 80 dBA Leq(1-hour) at nearby "noise-sensitive land uses," as that term is defined in Section 11.16.020 of the Municipal Code.

3.4 THRESHOLDS OF SIGNIFICANCE

TRAFFIC NOISE

Generally, a 3 dBA increase in noise levels is barely perceptible, and a 5 dBA increase in noise levels is clearly perceptible. In areas where the existing ambient noise level exceeds 65 dBA CNEL, the noise environment is considered degraded and less of an increase in ambient noise levels is allowed. Therefore, a proposed project would normally have a significant offsite traffic noise impact if one of the following criteria are met:

• When existing noise levels are between 60 dBA and 65 dBA CNEL, a 3 dBA CNEL increase in noise will be considered significant;

• When existing noise levels exceed 65 dBA CNEL, a 1.5 dBA CNEL increase in noise will be considered significant.

STATIONARY NOISE

The Noise Ordinance sets limits on the level and duration of time a stationary noise source (e.g., mechanical equipment) may impact a noise-sensitive area. Table 3-2 outlines these noise limits. The determination that a project has the potential to exceed the City's established noise limits is typically based on a noise technical report prepared by a qualified acoustical consultant. The project would normally have a significant stationary noise impact if it would exceed the stationary source noise criteria for the City of Lake Forest as specified in Table 3-2.

CONSTRUCTION NOISE

Per Section 11.16.050, a project would normally have a significant construction noise impact if construction noise exceeds 80 dBA Leq at nearby Noise-Sensitive Residential Land Uses, as that term is defined in the Municipal Code, between the hours of 7:00 a.m. and 8:00 p.m., Monday through Saturday, or exceeds Municipal Code standards at nearby Noise-Sensitive Residential Land Uses between 8:00 p.m. and 7:00 a.m., Monday through Saturday, or at any time on Sunday or a legal City of Lake Forest holiday.

VIBRATION

The Noise Control Chapter (11.16) of the Lake Forest Municipal Code states that operating or permitting the operation of any device that creates vibration that is distinctly perceptible to an individual at a receiving vibration-sensitive land use is prohibited. A project would normally have a significant vibration impact if it would exceed applicable criteria from the FTA or Caltrans regarding vibration damage and annoyance limits.

3.5 POTENTIAL MITIGATION

The mitigation measures listed in this section are examples of the types of mitigation that could be applied to a project to reduce identified noise impacts. The actual mitigation recommended for a project will vary depending on the project itself, the specific impact, and other issues that may arise on a case-by-case basis. It is not intended that each mitigation measure identified in this section be applied to every project or that the mitigation be written exactly as presented herein. Similarly, mitigation may be required that is not identified in this document.

CONSTRUCTION NOISE

Potential mitigation measures for short-term construction-related noise impacts that exceed the significance thresholds may include:

• Use of noise control techniques (e.g., absorptive mufflers, use of intake silencers, engine enclosures and acoustically attenuating shields or shrouds) on equipment and trucks used for project construction.

• Use of temporary sound barriers/blankets between construction equipment and nearby sensitive receptors. Barriers must be constructed with solid material with a density of at least 1 pound per square foot with no gaps from the ground to the top of the barrier and must be lined on the construction side with acoustical blanket.

• Use of hydraulically or electrically powered impact tools (e.g., jack hammers, pavement breakers, and rock drills) for project construction to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler and/or sound attenuation barriers/blankets on the compressed air exhaust may be used. Quieter procedures would include, for example, drills rather than impact equipment.

• Use of temporary power poles or the electrical grid instead of generators.

• Locating stationary noise sources as far from adjacent properties as possible, and use of temporary sheds, insulation barriers, or other measures as determined by the City.

• To the extent consistent with applicable safety regulations, use of trucks with SAE J994 Class "D" or equivalent reverse motion alarms (ambient-adjusting, or “smart alarms” that automatically adjust the alarm to 5 dBA above the ambient near the operating equipment) or switched off back-up alarms with human spotters in compliance with all safety requirements and laws.

• Truck routes that avoid residential areas to the extent possible.

STATIONARY NOISE SOURCES

Potential mitigation measures for long-term stationary noise impacts that exceed the significance thresholds may include:

• Redesign the source to radiate less noise (e.g., substitute a quieter equipment type/process or enclose the source with sound absorbent material);

• Use insulation or construct solid barriers between noise sources and noise receivers;

• Separate noise sources from noise receivers by distances sufficient to attenuate the noise to acceptable levels;

• Locate delivery, truck loading, or trash pickup areas as far from “noise-sensitive land uses” (as that term is defined in Section 11.16.020 of the Municipal Code) as possible;

• Limit delivery and loading/unloading hours;

• Insulate structures;

• Limit the hours of use of noise-generating equipment;

• Require a follow-up acoustical analysis once preliminary noise reduction considerations are

presented;

• Inspect noise generating equipment prior to issuance of occupancy permits to verify onsite containment of noise.

TRAFFIC NOISE

Potential mitigation measures for long-term mobile noise impacts that exceed the significance thresholds may include:

• Attenuate noise by using barriers;

• Installation of “quiet pavement” (e.g., rubberized asphalt);

• Redirect sound transmission paths;

VIBRATION

Potential mitigation measures for vibration impacts that exceed the significance thresholds may include:

• Use of equipment that generates lower vibration levels (e.g., static rollers instead of vibratory rollers, smaller earthmoving equipment when within close distances of receptors, alternatives to impact pile driving);

• Increase or establish minimum property line setbacks for vibration-generating equipment;

• Require vibration monitoring during applicable phases of construction.

3.6 REFERENCES

• City of Lake Forest 2020 General Plan – Public Safety Element

• City of Lake Forest Municipal Code, Chapter 11.16 – Noise Control.

SECTION 4
AIR QUALITY

4.1 BACKGROUND

Air quality impacts may occur during the construction and operation phases of a project, and may come from stationary, mobile, and area sources. Construction and operation emissions are addressed in this section.

REGIONAL SETTING

Air quality is dependent upon the regional topography, climate, and local pollutant sources. Topography in the region consists of a basin surrounded to the north and east by mountain ranges. A subtropical high pressure cell over the Pacific Ocean provides cool, moist marine air that is confined by the mountain slopes maintaining moderate temperatures and comfortable humidity and limiting precipitation to a few storms during the winter "wet" season. The average wind speed for the region is the lowest of the nation's ten largest urban areas. In addition, the summertime maximum mixing height (an index of how well pollutants can be dispersed vertically in the atmosphere) in Southern California averages the lowest in the U.S. This low mixing height increases the trapping effect of the surrounding mountain ranges which prevent airborne pollutants from dispersing horizontally. The Southern California area is also an area with abundant sunshine, which drives the photochemical reactions forming certain pollutants.

Given the highly urbanized nature of coastal Southern California, many mobile (e.g., motor vehicles) and non-mobile (e.g., refineries or power stations) sources of air pollution exist. The data indicate that on-road mobile sources (e.g., motor vehicles) contribute the most regional emissions. Therefore, the combination of ideal topography, climate, and pollutant sources has resulted in a severe air pollution problem in Southern California.

HEALTH EFFECTS OF AIR POLLUTANTS

It is generally recognized that the presence of elevated concentrations of certain air pollutants (either directly or in reaction to other pollutants) can cause both damage to the environment and health problems in people. Such pollutants have been identified and regulated as part of the overall effort to prevent further deterioration and to facilitate improvement in air quality.

The following pollutants are regulated by the U.S. Environmental Protection Agency (USEPA) and are therefore subject to emissions reduction measures adopted by federal, State, and other regulatory agencies.

Ozone (O_3): Ozone is a secondary pollutant formed by the chemical reaction of volatile organic compounds and nitrogen oxides (NO_x) under favorable meteorological conditions (such as high temperature and air stagnation). An elevated level of ozone irritates the lungs and breathing passages, thereby increasing susceptibility to respiratory infections and reducing the ability to exercise. Effects are more severe in people with asthma and other respiratory ailments. Long-term exposure may lead to lung tissue scarring and may lower lung efficiency.

Carbon Monoxide (CO): Carbon monoxide is primarily emitted from combustion processes and motor vehicles because of incomplete fuel combustion. Elevated concentrations of CO weaken the heart's contractions and lower the amount of oxygen carried by the blood. It is especially dangerous for people with chronic heart disease. Inhalation of moderate levels of carbon monoxide can cause nausea, dizziness and headaches, and can be fatal at high concentrations.

Particulate Matter (PM10 and PM2.5): The human body naturally prevents the entry of large airborne particles into the body. However, small particles, with an aerodynamic diameter equal to or less than 10 microns (PM10) and even smaller particles with an aerodynamic diameter equal to or less than 2.5 microns (PM2.5) can get trapped in the nose, throat, and upper respiratory tract. These small particulates enter the body and could potentially aggravate existing heart and lung diseases, change the body's defenses against inhaled materials, and damage lung tissue. The elderly, children, and those with chronic lung or heart disease are most sensitive to PM10 and PM2.5. Lung impairment can persist for two to three weeks after exposure to high levels of particulate matter. Some types of particulate matter could become toxic after inhalation due to the presence of certain chemicals and their reaction with internal bodily fluids.

Nitrogen Oxides (NO_x): Major sources of NO_x include power plants, large industrial facilities, and motor vehicles. Nitrogen oxides are emitted from combustion processes and irritate the nose and throat. They increase susceptibility to respiratory infections, especially in people with asthma. NO_x is a precursor to the formation of ozone (O_3), which is why it is of principal concern.

Sulfur Dioxide (SO_2): Major sources of SO_2 include power plants, large industrial facilities, diesel vehicles, and oil-burning residential heaters. Emissions of sulfur dioxide aggravate lung diseases, especially bronchitis. It also constricts the breathing passages, especially in asthmatics and people involved in moderate-to-heavy exercise. Sulfur dioxide potentially causes wheezing, shortness of breath, and coughing. High levels of particulate matter appear to worsen the effect of sulfur dioxide, and long-term exposures to both pollutants lead to higher rates of respiratory illness.

Lead (Pb): Lead is emitted from industrial facilities and from the sanding or removal of old lead-based paint. Smelting or processing metal is the primary source of lead emissions, which is primarily a regional pollutant. Lead affects the brain and other parts of the body's nervous system. Exposure to lead in very young children impairs development of the nervous system, kidneys, and blood-forming processes in the body.

Volatile Organic Compounds (VOCs): Although VOCs are not directly a health hazard and are not considered a criteria pollutant, they react with NO_x in the presence of sunlight to produce ozone. As such, VOC emissions are regulated as a precursor of ozone. Some State and local agencies regulate VOCs as Reactive Organic Gases (ROGs), which possess similar characteristics as VOCs.

4.2 REGULATORY AND PLANNING SETTING

California is divided by the California Air Resources Board (CARB) into air basins determined by meteorological and topographical features. The City of Lake Forest is in the South Coast Air Basin (Basin), a 6,600 square-mile area comprised of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Basin is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The SCAQMD adopts and enforces regulations for stationary sources in the air basin and, together with the Southern California Association of Governments (SCAG), local governments, and the private sector, develops the air basin's Air Quality Management Plan (AQMP). CARB must approve the AQMP for the Basin and all other air basins in the state that exceed California and National Ambient Air Quality Standards (CAAQS and NAAQS, respectively). The CAAQS and NAAQS are determined by the California Clean Air Act (CCAA) and the 1990 amendments to the federal Clean Air Act (CAA). The CARB-approved AQMPs are included in the State Implementation Plan (SIP) which is approved by the USEPA.

The AQMP is the most important air quality management document for the Basin because it provides the blueprint for meeting CAAQS and NAAQS. State law mandates the revision of the AQMP at least every three years, and federal law specifies certain dates for developing attainment plans for criteria pollutants. The 2003 AQMP was adopted locally on August 1, 2003 by the governing board of SCAQMD. The CARB adopted the AQMP as part of the SIP on October 23, 2003, and the SIP was adopted by the USEPA on April 9, 2004. The 2007 AQMP was adopted on June 1, 2007 by the governing board of the SCAQMD.

The SCAQMD is the main regulatory authority in the Basin with regard to the air quality impacts of projects. In 1993, the SCAQMD adopted the *CEQA Air Quality Handbook* (*1993 Handbook*) which provides guidance for CEQA analysis of potential air quality impacts resulting from the construction and operation of new projects. The *1993 Handbook* addresses screening criteria for stationary and mobile source emissions; the effects of certain pollutants (e.g., toxics, carbon monoxide) on sensitive receptors; and area sources (e.g., landfills, construction sites, etc.). It also provides recommended thresholds to assist in determining the significance of potential project impacts from these sources.

SCAQMD is currently preparing an *Air Quality Analysis Guidance Handbook* (*Handbook*) to replace the *1993 Handbook*. Several sections of the *1993 Handbook* providing guidance on impact analysis are considered obsolete and updated sections are presently available on the SCAQMD website[1]. These updated sections may be used to address project impacts until such time that the updated Handbook becomes available.

The SCAQMD recommends emission thresholds for all federally- regulated air pollutants.These thresholds were established by the SCAQMD, based on scientific and factual data contained in the federal and state Clean Air Acts and regulations of the federal and state Environmental Protection Agencies (EPAs). Construction and operational emissions are considered by the SCAQMD to be significant if they exceed the thresholds shown in Section 4.4.

The SCAQMD recommends that the thresholds outlined in the *1993 Handbook* be used by lead agencies in making a determination of significance related to air quality. The City of Lake Forest uses the SCAQMD thresholds in its determination of significance of air quality impacts.

Both the federal government, through USEPA authority under the federal CAA, and California, through CARB authority under the CCAA, set ambient air standards to protect public health and welfare. The federal and state standards for air pollutants are presented in Table 4-1.

1 http://www.aqmd.gov/ceqa/hdbk.html

TABLE 4-1
AMBIENT AIR QUALITY STANDARDS

Air Pollutant	State	National	
	Standard	Primary	Secondary
Ozone (O_3)	0.09 ppm, 1-hr avg. 0.07 ppm. 8-hour avg.	0.12 ppm, 1-hr avg. 0.08 ppm. 8-hour avg.	0.12 ppm, 1-hr avg. 0.08 ppm. 8-hour avg.
Carbon Monoxide (CO)	9.0 ppm, 8-hr. avg. 20 ppm. 1-hr. avg.	9.0 ppm, 8-hr. avg. 35 ppm, 1-hr. avg.	9.0 ppm, 8-hr. avg. 35 ppm, 1-hr. avg.
Nitrogen Dioxide (NO_2)	0.18 ppm, 1-hr. avg. 0.03 ppm. AAM	0.0534 ppm, annual avg.	0.0534 ppm, annual avg.
Sulfur Dioxide (SO_2)	0.25 ppm 1-hr 0.04 ppm, 24-hr avg.	0.03 ppm, annual avg. 0.14 ppm, 24-hr. avg.	0.50 ppm, 3-hr. avg.
Suspended Particulate Matter (PM10)	50 Φg/m^3, 24-hr. avg. 30 Φg/m^3 AGM	150 Φg/m^3, 24-hr avg.	
Suspended Particulate Matter (PM2.5)	12 Φg/m^3 AGM	35 Φg/m^3, 24-hr avg. 15 Φg/m^3 AAM	35 Φg/m^3, 24-hr avg. 15 Φg/m^3 AAM
Sulfates (SO_4)	25 Φg/m^3, 24-hr avg.		
Lead (Pb)	1.5 Φg/m^3, monthly avg.	1.5 Φg/m^3, calendar quarter	1.5 Φg/m^3, calendar quarter
Hydrogen Sulfide (H_2S)	0.03 ppm, 1-hr avg.		
Vinyl Chloride	0.010 ppm, 24-hr avg.		
Visibility-Reducing Particles	In sufficient amount to reduce prevailing visibility to less than 10 miles at relative humidity less than 70%, 1 observation		

Note: ppm = parts per million by volume
Φg/m^3 = micrograms per cubic meter
AAM = annual arithmetic mean
AGM = annual geometric mean

FEDERAL AND STATE ATTAINMENT STATUS

National ambient air standards set by the USEPA establish deadlines for attainment and consequent penalties for non-attainment. The Basin, the Nation's only "extreme" O_3 non-attainment area, has until 2010 to achieve the national 1-hour ozone standard. The Basin is serious non-attainment for PM10 because it did not meet the 2005 attainment deadline. The basin was the only NO_2 non-attainment area regularly exceeding the standard in Los Angeles County until 1992, and was redesignated attainment in 1998 by the USEPA. Additionally, the Basin was recently redesignated as attainment for CO in 2006 by the USEPA.

In July 1997, the USEPA promulgated stricter standards for ozone and fine particulates (PM2.5), with up to 15 years allowed for attaining the PM2.5 standard. Attainment of the new 8-hour ozone standard would not be required until after the 1-hour standard is achieved. The PM10 standard was revised, but the existing PM10 standard remains in effect until attainment is achieved. Although the USEPA has designated a standard for PM2.5, there has not been sufficient monitoring of this

pollutant to determine attainment status. Therefore, until there has been sufficient monitoring for the USEPA to designate the PM2.5 attainment status for each region, the PM_{10} standard will remain the particulate standard of reference.

California standards are generally stricter and are designed to ensure attainment of national standards, but have no penalty for non-attainment. California and national attainment status for the criteria pollutants are presented in Table 4-2.

TABLE 4-2
ATTAINMENT STATUS OF CRITERIA POLLUTANTS
IN THE SOUTH COAST AIR BASIN

Pollutant	State	Federal
Ozone (1-hour standard)	Nonattainment	Extreme Nonattainment*
Ozone (8-hour standard)	No State Standard	Severe 17 Nonattainment**
PM10	Nonattainment	Serious Nonattainment***
PM2.5	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment

* As described in CAA 188(b)(1), area has a design value of 0.187 ppm and above.
** Area has a design value of 0.127 up to but not including 0.187 ppm
*** As designated by CAA 188(b)(1) for failure to meet standards by the 1993 deadline.

Source: Draft Final 2007 AQMP

4.3 ESTABLISHED SCAQMD AIR POLLUTION EMISSION THRESHOLDS

The SCAQMD has established air pollution emission thresholds to assist lead agencies in determining whether or not a project would result in significant local or regional air quality impacts during construction and operation. The SCAQMD emissions thresholds are described below. Methodologies recommended by SCAQMD for calculating pollutant emissions are provided on its website: www.aqmd.gov/ceqahdbk.html.

CONSTRUCTION EMISSIONS

Construction of new projects has the potential to create air quality impacts through earth moving operations and the use of heavy duty equipment and trucks. Fugitive dust emission results from land clearing, demolition, ground excavation, cut and fill operations, and equipment traffic over temporary roads at construction sites. Mobile source emissions, primarily nitrogen oxides (NO_x), result from the use of construction equipment such as bulldozers, trucks, and scrapers. The emissions are most significant when using heavy-duty, diesel-fueled equipment. Mobile source emission also results from vehicle trips by construction workers to and from the project site. The following significance thresholds for air quality have been established by the SCAQMD on a daily basis:

- 100 pounds per day for NO_x
- 75 pounds per day for VOC
- 150 pounds per day for PM10
- 55 pounds per day for PM2.5
- 150 pounds per day for SO_x

- 550 pounds per day for CO
- 3 pounds per day for Lead

OPERATIONAL EMISSIONS

Operational emissions are those which occur after project construction activities have been completed, and the project becomes operational. Operational emissions are produced by the occupants of a facility or development, and by both mobile and stationary sources associated with the facility or development. Depending on the characteristics of the individual project, operational activities have the potential to generate emissions of criteria contaminants identified below.

Stationary source emissions include point source emissions that have an identifiable location. Mobile source emissions occur as a result of motor vehicle, train, ship, and airplane travel. Motor vehicle emissions result from passenger vehicles and truck travel through the Basin and are generally analyzed on a regional basis. Motor vehicle emissions can influence local air quality through changes in carbon monoxide (CO) concentrations, which are usually highest at busy intersections, parking garages, or other focused areas of vehicle activity. Changes in CO concentrations are generally analyzed only where they would occur in proximity to sensitive receptors.

The following significance thresholds for air quality have been established by the SCAQMD for project operations in the South Coast Air Basin. These thresholds are used to determine if individual projects would have significant impacts on the regional air quality.

- 55 pounds per day of NO_x
- 55 pounds per day of VOC
- 150 pounds per day of PM10
- 55 pounds per day for PM2.5
- 150 pounds per day of SO_x
- 550 pounds per day of CO
- 3 pounds per day of Lead
- California state 1-hour or 8-hour CO standard (refer to Table 4-1, Ambient Air Quality Standards)

LOCALIZED SIGNIFICANCE THRESHOLDS

As part of the SCAQMD's environmental justice program, a methodology to analyze the localized impacts of air pollutant dispersion was prepared for inclusion in CEQA analyses. The Localized Significance Threshold (LST) methodology as approved by SCAQMD in June 2003 is available for viewing on their website at http://www.aqmd.gov/ceqa/handbook/lst/Method_final.pdf. The LST methodology was developed to determine whether or not a project may generate significant adverse localized air quality impacts from dispersion of NO_x, CO, PM10, and PM2.5, the pollutants with the highest potential to affect human health. LST's represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standards, and are developed based on the ambient concentrations of that pollutant and weather conditions in each Source Receptor Area (SRA). The City of Lake Forest is located within SRA 19, the Saddleback Valley Air Monitoring Subregion.

The LST methodology is applied by local jurisdictions on a voluntary basis to all projects less than 5 acres in size that are located within 500 meters of sensitive receptors (e.g., schools, hospitals, and residences). The LST mass rate look-up tables provide thresholds according to proposed project distance from sensitive receptors and the SRA. For the CEQA analysis, the threshold with the

lowest pounds per day emissions, either the LST or the construction/operational emissions thresholds described above, would be applied to the projected emissions. If the calculated on-site emissions for the proposed construction or operational activities are below the LST emission levels found on the LST mass rate look-up tables, and no other significance thresholds for air quality are exceeded, then the proposed construction or operation activity would not result in significant air quality impacts. However, a finding of significant impact is made if LST thresholds are exceeded.

PM2.5 Significance Thresholds

In the last few years, both the California and federal governments have established ambient air quality standards for fine particulate matter (PM) less than or equal to 2.5 microns in diameter (PM2.5). Although a general threshold of 55 pounds per day was published by the SCAQMD, there currently isn't sufficient data as measured from air pollutant monitoring stations throughout the state to appropriately determine emissions thresholds for local projects. As a result, a methodology was established by SCAQMD for calculating PM2.5 and appropriate PM2.5 significance thresholds for the purpose of analyzing local and regional PM2.5 air quality impacts in CEQA and NEPA air quality analyses (PM2.5 Methodology). The PM2.5 Methodology was approved in October 2006 by SCAQMD and is available for viewing on their website at http://www.aqmd.gov/ceqa/handbook/PM2_5/finalmeth.doc.

Because there are no currently approved PM2.5 emission factors for mechanical or combustion processes, and since PM2.5 is a subset of PM10, the current methodology for calculating PM10 from fugitive dust sources (grading, demolition, unpaved roads, open storage piles, etc.) and combustion sources (stationary combustion sources, vehicle exhaust) is used to derive the project-specific PM2.5 threshold and anticipated project emissions. If anticipated project emissions are found to exceed the threshold, as determined by the PM2.5 Methodology, a finding of significant impact is made.

4.4 THRESHOLDS OF SIGNIFICANCE

Appendix G, Section III of the Environmental Checklist Form in the State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make determinations regarding air quality impacts. A project would normally have a significant impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan.

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation. The SCAQMD construction and operational emission thresholds identified in Table 4-3 are used for this assessment.

TABLE 4-3
SCAQMD EMISSIONEMISSION THRESHOLDS

Emission Thresholds of Significance		
Pollutant	**Construction pounds/day**	**Operation pounds/day**
Nitrous Oxides (NO_x)	100	55
Volatile Organic Compounds (VOC)	75	55
Particulate Matter <10µg (PM10)	150	150
Particulate Matter <2.5µg (PM2.5)	55	55
Sulfur Oxides (SOx)	150	150
Carbon Monoxide (CO)	550	550

Lead (Pb)	3	3
Source: SCAQMD *CEQA Air Quality Handbook*, 1993 (As amended at http://www.aqmd.gov/ceqa/handbook/signthres.pdf) rev March 2009.		

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including release in emissions which exceed quantitative thresholds for ozone precursors).

- Expose sensitive receptors to substantial pollutant concentrations. Methodologies established by SCAQMD for assessing local impacts, including but not limited to Local Significance Thresholds and thresholds for PM2.5 are used for this assessment.

- Create objectionable odors affecting a substantial number of people.

- A project will be considered to result in a cumulatively considerable net increase of any criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors) where the incremental effect of the project emissions, considered together with past, present, and reasonably anticipated further project emissions, increase the level of any criteria pollutant above the existing ambient level.

4.5 SCAQMD ADDITIONAL INDICATORS FOR AIR QUALITY IMPACTS

Within the *SCAQMD CEQA Air Quality Handbook*, the SCAQMD has provided additional indicators for air quality impacts. The SCAQMD suggests that these be used as screening criteria indicating the need for further analysis with respect to air quality, beyond that needed to address air quality impacts pursuant to the thresholds discussed above.If a project could result in any of the following conditions, the City may require more detailed analysis of the project to support the preparation of environmental documentation. These indicators are not intended to represent thresholds of significance.

- Project will have hazardous materials on site and could result in an accidental release of air toxic emissions or acutely hazardous materials posing a threat to public health and safety.

- Project could emit an air toxic contaminant regulated by SCAQMD rules or that is on a federal or state air toxic list.

- Project could involve burning of hazardous, medical, or municipal waste as waste-to-energy facilities.

- Project could be occupied by sensitive receptors within a quarter-mile of an existing facility that emits air toxics identified in District Rule 1401 (New Source Review of carcinogenic air contaminants) or near CO hot spots.

- Project could emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of 10 in 10 million.

4.6 POTENTIAL MITIGATION

The mitigation measures suggested in this section are examples of the types of mitigation that could be applied to a project to reduce identified air quality impacts. The actual mitigation recommended for a project will vary depending on the project itself, the specific impact, and other issues that may arise on a case-by-case basis. It is not intended that each mitigation measure identified in this section be applied to every project or that the mitigation be written exactly as presented herein. Similarly there may be mitigation required of a project that is not identified in this document.

CONSTRUCTION-RELATED AIR QUALITY EMISSIONS

The *SCAQMD CEQA Air Quality Handbook, as amended,* identifies potential mitigation for air quality impacts associated with construction activities. These mitigation measures should be consulted when developing mitigation requirements for individual projects. In addition, potential mitigation measures for short-term construction-related air quality impacts may include:

- A requirement for compliance with SCAQMD regulations shall be included in the contractor plans and specifications. All construction contractors shall comply with SCAQMD regulations, including Rule 402, the Nuisance Rule, and Rule 403, Fugitive Dust.

OPERATIONAL EMISSIONS

The *SCAQMD CEQA Air Quality Handbook,* as amended, identifies potential mitigation for air quality impacts associated with operation of various land uses. These mitigation measures should be consulted when developing mitigation requirements for individual projects.

4.7 REFERENCES

Air Quality Analysis Guidance Handbook (on-line supplemental information). 2008. http://www.aqmd.gov/ceqa/hdbk.html

CEQA Air Quality Handbook. 1993. South Coast Air Quality Management District.

Air Quality Management Plan. 2007. South Coast Air Quality Management District.

Final Localized Significance Threshold Methodology. 2003. South Coast Air Quality Management District.

Final Methodology to Calculate PM2.5 and PM2.5 Significance Thresholds. 2006. South Coast Air Quality Management District.

SECTION 5
LAND USE

5.1 BACKGROUND

The City of Lake Forest encompasses approximately 17 square miles in southern Orange County. The Land Use Policy Map in the Land Use Element of the General Plan illustrates the various types and distribution of land uses planned for the City.

Land use issues can be divided into two categories: land use consistency, and land use compatibility. Land use consistency addresses the consistency or compliance of proposed projects with the goals and policies of the General Plan, the Municipal Code, and any other relevant planning programs (such as specific plans) that contain environmental policies. It should be noted that a project determined to be inconsistent with the General Plan or Zoning Code will require a general plan amendment or zone change as a requested discretionary action.

Land use compatibility issues deal with the potential for projects or programs to create incompatible situations between land uses or activities. Such incompatibilities may result from environmental impacts associated with the proposed land use. Examples of incompatibility include land uses which create noise, odor, safety hazards, visual, or other environmental impacts which conflict with surrounding land uses and their occupants and the activities and conditions typically associated with those land uses. Incompatibilities may also result from differences in the physical scale of development, noise levels, and hours of operation. It should be noted that although the City may conclude that a land use compatibility issue(s) occurs internal or external to a site, this would not always represent a significant land use impact. Typically, a significant impact may occur if there are multiple areas of incompatibility or indirect effects identified that are considered significant and unavoidable.

A project may also disrupt the physical arrangement of an established community by introducing new infrastructure such as roads that would isolate land uses that could interrupt the typical activities or change the land use conditions in a community.

5.2 LAND USE GOALS, POLICIES, AND REGULATIONS

The City of Lake Forest General Plan Land Use Element identifies six goals and associated policies which have been developed to address land use issues facing the City of Lake Forest. These goals and policies serve as guides for reviewing development proposals, planning facilities to accommodate anticipated growth, and accomplishing community development strategies. These goals must be taken into consideration when addressing land use issues for proposed projects.

Goal 1 - A balanced land use pattern that meets existing and future needs for residential, commercial, industrial, and community uses.

Goal 2 - A distinct image and identity for Lake Forest.

Goal 3 - New development that is compatible with the community.

Goal 4 - New development conforming to the established planned community development plans and agreements.

Goal 5 - Diversification and expansion of economic activities, and retention of existing businesses and revenues in support of public services.

Goal 6 - Revitalization of older residential, commercial, and industrial development.

The City Zoning Ordinance, Planned Community Texts, and Area Plan Regulations are the primary regulatory documents used to ensure land use compatibility. The Zoning Ordinance and Planned Community Texts contain standards for development, such as minimum lot sizes, building setback and maximum height limitations, parking and landscaping requirements, and other standards that are designed to promote compatibility.

5.3 THRESHOLDS OF SIGNIFICANCE

A project would normally have a significant land use impact if it would:

- Physically divide an established community.
- Substantially conflict with existing on-site or adjacent land use due to project-related significant unavoidable indirect effects (i.e. noise, aesthetics, etc) that preclude use of the land as it was intended by the General Plan.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, planned community, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- Conflict with the Central and Coastal Natural Communities Conservation Program/Habitat Conservation Plan (NCCP/HCP) of which the City of Lake Forest is a participant.

5.4 POTENTIAL MITIGATION

The mitigation measures suggested in this section are examples of the types of mitigation that could be applied to a project to reduce identified land use impacts. The actual mitigation recommended for a project will vary depending on the project itself, the specific impact, and other issues that may arise on a case-by-case basis. It is not intended that each mitigation measure identified in this section be applied to every project or that the mitigation be written exactly as presented herein. Similarly, there may be mitigation required of a project that is not identified in this document.

LAND USE COMPATIBILITY

Mitigation measures to reduce secondary impacts are found in the individual sections (noise, traffic, aesthetics, etc.). Following are potential mitigation measures that may reduce land use compatibility impacts:

Short-term Construction-Related Impacts

- Develop haul routes which would avoid sensitive uses to the extent feasible.

Long-term Impacts

- Change the project design, configuration, visual screening, setbacks, building heights, lighting, etc. to be compatible with surrounding existing and planned uses;

- Restrict certain operational characteristics of the proposed use to reduce or eliminate impacts, such as limiting hours of operation or placing restrictions on specific types of uses or activities proposed for the project;

- Provide enclosed structures around certain activities that normally occur outdoors;

- Provide pedestrian and bicycle routes or crossings to increase mobility;

- Provide a buffer (such as a decorative wall or landscaping) where residential uses are adjacent to non-residential uses and where the potential for the land use incompatibilities exist.

5.5 REFERENCES

City of Lake Forest General Plan, Land Use Element, revised July, 2008.

Lake Forest, City of, Redevelopment Agency. 2004. The Arbor on El Toro: Project Area. Lake Forest, CA. http://thearbor.info/project_area.php

Lake Forest, City of. 2005. 2005 Economic Profile. Lake Forest, CA.

SECTION 6
AESTHETICS

6.1 BACKGROUND

An aesthetic resource is any element, or group of elements, that embodies a sense of beauty. The aesthetic resources of a city include its natural setting, the architectural quality of its buildings, the vitality of its landscaping, the spatial relationships they create, and the views afforded by each.

Aesthetics, views, and nighttime illumination are related elements in the visual environment for the City of Lake Forest. Visual features of the City were previously described in Section 1, Introduction, of this document. Aesthetics generally refers to the identification of visual resources (natural and man-made), and the overall judgment (visual perception) of the quality of the visual environment. Views refer to visual access and obstruction, or whether it is possible to see a focal point or panoramic view from an area. Nighttime illumination addresses the effects of a proposed project's exterior lighting upon surrounding uses.

The visual impacts of a project include both the objective visual resource changes created by the project and the subjective viewer response to that change. Distance from the project, frequency of view, length of view, viewer activity, viewer perception, and viewing conditions contribute to the assessment of a visual impact. The physical limits and changes of the views and the quantity of the viewers are objective. Viewer perception is subjective.

The perception of different viewer groups to the visual environment and its elements varies based on viewer activity and awareness. Activities such as commuting in heavy traffic can distract an observer from many aspects of the visual environment. Conversely, pleasure driving or relaxing in a scenic environment can encourage an observer to look at the view more closely and at greater length, thereby increasing the observer's attention to detail. Sensitivity is also determined by how much the viewer has at stake in the viewshed. Typically, people who reside or work in an area are more sensitive to change than those just passing through.

The City of Lake Forest has not designated any scenic vistas or corridors within its jurisdiction. However, within the City of Lake Forest, the County of Orange Scenic Highway Plan identifies El Toro Road as a scenic highway. El Toro Road is a designated "landscape corridor" from I-5 to Santa Margarita/Portola Parkway and a "viewscape corridor" from Santa Margarita Parkway to the northern city limits. A "landscape corridor" traverses developed or developing areas and has been designated for special treatment to provide a pleasant driving environment as well as community enhancement. A "viewscape corridor" is a route which traverses a corridor within which unique or unusual scenic resources and aesthetic values are found. This designation is intended to minimize the impact of the highway and land development upon the significant scenic resource along the route.

6.2 AESTHETIC/DESIGN GUIDELINES AND STANDARDS

The aesthetic character of much of the City of Lake Forest is, or will be, regulated by design guidelines for Planned Communities, and the El Toro Redevelopment Project Area. Design Guidelines are prepared, or can be prepared, to ensure visual order and continuity as a project or designated area is built out over time. They provide planning, architectural, and landscape design themes for various land uses and facilities within a specific area or community. Additionally, the City's Municipal Code includes development standards that also serve to reduce potential aesthetic impacts (set backs, height limitations, signage, etc.).

6.3 ASSESSMENT OF VISUAL CHANGES

As previously noted, the perception of a view or the visual quality of a site is subjective and can vary with each individual. However, it is possible to qualify certain resources as having aesthetic characteristics, and establish general guidelines for assessing the aesthetic impacts of projects.

Within the City of Lake Forest, aesthetic resources as well as architectural character must be taken into consideration. The determination as to whether a site qualifies as an aesthetic resource includes, but is not limited to, its physical attributes, visibility, and uniqueness. With respect to architectural character, it is important that buildings and other visual landmarks are properly fitted into the built environment, and take into consideration potential aesthetic impacts on the natural environment. Factors used in determining the suitability of new development in a given location include scale (height and mass), pattern (separation from other buildings), and architectural design.

Typically, a visual impact assessment for a specific project is initiated with an identification of the natural or built features that gives the subject area its aesthetic character or image. The visual quality of the area should be identified. The visual quality of natural and man-made landscapes can be measured using three criteria defined below: vividness, intactness and unity. None of these is itself equivalent to visual quality, all three must be high to indicate high quality.

> **Vividness** is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
>
> **Intactness** is the visual integrity of the natural and man-made landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, as well as in natural settings.
>
> **Unity** is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.

The description of the aesthetic character of a site should also take into consideration views from various vantage points, as appropriate. Vantage points typically considered include public views from roadways, bikeways, trails, recreation areas, etc. The view of a site can vary with location. For example, views of larger sites with diverse aesthetic character will vary with location of the viewer. Views from distant vantage points should also be addressed. Views can be demonstrated with photographs.

Adverse visual effects can include the loss of natural features or areas, the removal of urban features with aesthetic value, or the introduction of contrasting urban features into natural areas of urban settings. The analysis of potential visual effects of a project requires the identification of features of the project that would be added to the site, including building heights, bulk, setbacks, architectural style, or any proposed zone changes or variances. The degree to which the introduction of new features or the loss of existing aesthetic elements would alter, degrade, or contrast with the existing valued aesthetic character of the area needs to be evaluated. Examples of contrast in areas where there is a consistent architectural theme, style or other aesthetic character could include, but are not limited to, the following:

- The project's architectural style, building materials, massing, or size would contrast with adjacent development, such that the aesthetic value or quality of the area is diminished.

- The project would cause or contribute to a change in the overall character of the area (e.g., from residential to commercial, single-family to multi-family, etc.) and/or new development would contrast with existing architectural styles or themes.

- The project would grade or remove open space or natural lands and introduce contrasting built features.

The analysis should also determine to what degree the project could impact views from specific vantage points, as discussed previously.

6.4 THRESHOLDS OF SIGNIFICANCE

A project would normally have a significant visual impact if any of the following occurs:

- A project will substantially damage scenic resources, including scenic vistas from public parks and views from designated scenic highways or arterial roadways.

- A project will create a new source of substantial night lighting that would result in "sky glow" (i.e. illumination of the night sky in urban areas) or "spill light" (i.e. light that falls outside of the area intended to be lighted) onto adjacent sensitive land uses.

- A project will create a new source of substantial glare which would adversely affect daytime visibility and/or views in the area.

- A project will substantially degrade the existing visual character or quality of the site and its surroundings where:

    - The project exceeds the allowed height or bulk regulations, or exceeds the prevailing height and bulk of existing structures.

    - The project is proposed to have an architectural style or to use building materials that will be in vivid contrast to an adjacent development where that development had been constructed adhering to a common architectural style or theme;

    - The project is located on a visually prominent site and, due to its height, bulk, architecture or signage, will be in vivid contrast to the surrounding development or environment degrading the visual unity of the area.

    - A project would include unscreened outdoor uses or materials.

    - A project would result in the introduction of an architectural feature or building mass that conflicts with the character of the surrounding development.

6.5 POTENTIAL MITIGATION

The mitigation measures suggested in this section are examples of the types of mitigation that could be applied to a project to reduce identified aesthetic impacts. The actual mitigation recommended for a project will vary depending on the project itself, the specific impact, and other issues that may arise on a case-by-case basis. It is not intended that each mitigation measure identified in this section be applied to every project or that the mitigation be written exactly as presented herein. Similarly there may be mitigation required of a project that is not identified in this document.

AESTHETICS

- Preparation and implementation of additional landscape and irrigation plans prepared by a licensed landscape architect, subject to the review and approval of the City.

- Preparation of comprehensive sign plans to provide consistent signage throughout an area and to limit the size and number of signs.

- Minimize grading of natural and semi-natural open space.

- Modify structure design to eliminate or screen contrasting/detracting features.

- Place new or existing utilities underground.

- Incorporate policies and/or design which effectively integrates natural aesthetics into the project (i.e., cluster development, greenbelts, landscaping, etc.).

- Utilize architectural styles, materials, scale, massing, setbacks, signage, circulation patterns, pedestrian orientation, streetscape amenities, and landscaping common to and/or consistent with the character of existing surrounding uses, as appropriate.

- Consolidate compatible street furniture elements (benches, bus shelters, newspaper racks, trash receptacles, kiosks, etc.) whenever possible.

- Consolidate street graphics and individual signs into single-support structures where appropriate and compatible with the purpose and function of such informational, directional, and traffic control graphics.

- Mechanical equipment placed on any roof such as, but not limited to, air conditioning, heating ventilation ducts, and exhaust shall be screened from view through the use of approved roof screens, recessed roof wells, and/or the use of the building parapets.

- Screen garbage dumpsters and equipment from public view.

- Incorporate provisions outlined in applicable Design Guidelines into proposed developments.

- Facades should be interrupted by regular vertical expressions of columns, fenestration, changes in texture or color, or setbacks to minimize the impression of a large, uninterrupted expanse.

- Where appropriate to minimize the adverse visual impact of what would otherwise be blank or uninteresting facades, building surfaces shall be shielded and softened by landscaping using trees and vines, planter boxes, and other devices as appropriate.

NIGHTTIME ILLUMINATION

- Preparation and implementation of a lighting plan prepared by a qualified lighting engineer/consultant, subject to the review and approval of the City.

- Use high-pressure sodium, energy-efficient luminaries, and/or cut-off fixtures instead of typical mercury vapor fixtures for outdoor lighting.

- Direct exterior light downward and away from adjacent streets and adjoining land uses in a manner to minimize off-site spillage.

- Provide structural and/or vegetative screening from sensitive uses.

- Design exterior lighting to confine illumination to the project site, and/or to areas which do not include light-sensitive uses.

- Restrict the operation of outdoor lighting for recreational activities to no later than 10:00 p.m.

OBSTRUCTION OF VIEWS

- Reduce the width and/or height of new structures to reduce the extent of obstruction.

- Locate new structures on portions of the site that do not interfere with existing views.

6.6 REFERENCES

Lake Forest, City of, Redevelopment Agency. The Arbor on El Toro: Project Area. Lake Forest, CA. http://thearbor.info

City of Lake Forest General Plan, Recreation and Resources Element, Revised July 2008.

City of Lake Forest Master Environmental Assessment. 1994 (April).Prepared by Cotton/Beland/Associates, Inc.

County of Orange General Plan. 2000 (February). Transportation Element.

El Toro Redevelopment Project Area Design Guidelines. 2000 (May).

SECTION 7
WATER RESOURCES

7.1 BACKGROUND

Water resource issues addressed in this section include surface water and flooding, groundwater, and water quality. Flooding and water quality are two of the concerns associated with stormwater runoff. Stormwater runoff is precipitation that does not percolate into the ground, but flows overland or through the City's storm drain system where it is discharged to local creeks.

SURFACE WATER

Surface waters typically include, but are not limited to: lakes, rivers, streams/drainage courses, reservoirs, and the ocean. Five surface water drainages traverse the City of Lake Forest: Aliso Creek, Serrano Creek, Borrego Canyon Wash, and two smaller unnamed creeks (refer to exhibit RR-4 of the General Plan Recreation and Resources Element). Portions of the creeks have been channelized for flood control purposes. The largest drainage course is Aliso Creek which runs along the City's eastern boundary. Aliso Creek flows from the Cleveland National Forest to the Pacific Ocean. Surface water resources in the City also include four man-made lakes.

GROUNDWATER

Groundwater resources in the City of Lake Forest are limited. The Irvine Ranch Water District pumps some groundwater, but solely for agricultural purposes. The Orange County Water District (OCWD) has found that a high level of tricloroethylene (TCE) is present within local groundwater and identified El Toro Marine Corps Air Station as the source of the TCE. The OCWD has implemented programs to contain the contamination including construction of an extraction well system which would treat the water and inject it into a reclaimed water system.

FLOODING

Occasional floods along any water course are inevitable, including those within the City. The semi-arid environment in southern California increases the potential for flooding due to the variation and unpredictability in the amount and intensity of rainfall. There are several areas within the City identified as being within the 100-year flood zone (meaning there is a one percent chance that such a flood will occur in any one year). There are also areas within the City that are identified as being within the 500-year flood zone (0.2 percent chance of occurring in one year). The inundation areas for the 100-year and 500-year floods within the City are identified on Exhibit SN-1 of the Safety and Noise Element of the General Plan. The existing flood control storm drain system alleviates most flooding potential in the City, although there has been some erosion along the natural creeks.

Orange County Flood Control District (OCFCD) is responsible for regional flood control planning within the County. Lake Forest participates in the National Flood Insurance Administration (NFIA) program administered by the Federal Emergency Management Agency (FEMA). The NFIA program provides federal flood insurance subsidies and federally-financed loans for property owners in flood-prone areas.

WATER QUALITY

Urban runoff includes dry and wet weather flows that are transported from urbanized areas through storm water conveyance systems. As water flows over streets, parking lots, construction sites, and industrial, commercial, residential, and municipal areas, it intercepts pollutants from these areas

and transports them to receiving waters, typically drainage courses/rivers, and ultimately, the Pacific Ocean. If appropriate pollution control measures are not implemented, urban runoff may transport pathogens (bacteria, protozoa, viruses), sediment, trash, fertilizers (nutrients, mostly nitrogen and phosphorous compounds), oxygen demanding substances, pesticides, heavy metals, and petroleum products. If not properly managed and controlled, urbanization can change the local hydrology and increase pollutant loadings to receiving waters. As a watershed undergoes urbanization, permeable surface area decreases, runoff volume and velocity increase, riparian and wetland habitat decrease, the frequency and severity of flooding may increase, and pollutant loadings increase.

The regulatory setting relative to water quality is discussed below. The main receiving waters for runoff from most of the City of Lake Forest are San Diego Creek, Aliso Creek, and the Pacific Ocean. As identified in the Clean Water Act Section 303(d) list of impaired waters, San Diego Creek and the Pacific Ocean have been designated as "impaired" with respect to beneficial uses, primarily because of polluted urban runoff. These impaired waters do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. A portion of Aliso Creek is also identified as impaired primarily because of polluted urban runoff.

7.2 WATER QUALITY REGULATORY SETTING

The California Water Code establishes nine administrative areas in the State which are administered by the Regional Water Quality Control Board (RWQCB). The City of Lake Forest is within the jurisdiction of the RWQCBs for the Santa Ana Region (8) and the San Diego Region (9). Aliso Creek is within the San Diego Region and San Diego Creek (one of the main receiving waters from the City) is within the Santa Ana Region. Therefore, the City is subject to the regulations of both the Santa Ana RWQCB and the San Diego RWQCB.

Each of the nine regional boards is required to adopt a Water Quality Control Plan, or Basin Plan, for its respective region. The Basin Plans recognize and reflect regional differences in existing water quality, the beneficial uses of the Region's ground and surface waters, and local water quality conditions and problems. As required, the Basin Plans also specify water quality objectives intended to protect the identified beneficial uses.

Under the authority of the Clean Water Act, the Environmental Protection Agency (EPA) published regulations establishing the National Pollutant Discharge Elimination System (NPDES) permit application requirements for storm water discharges. The Clean Water Act prohibits the discharge of any pollutant to navigable waters from a point source unless an NPDES permit authorizes the discharge. The RWQCBs are authorized to implement a municipal stormwater permitting program as part of their NPDES authority, as an agent of the State Water Resources Control Board (SWRCB). The SWRCB has issued two general stormwater discharge permits to cover industrial and construction activities, which are required for specific industry types based on standard industrial classification and construction activities on five acres or more. The general permits include: the "Statewide General Industrial Storm Water Permit" (addresses waste discharge requirements for discharges of stormwater associated with industrial activities excluding construction activities); and, the "Statewide General Construction Stormwater Permit" (addresses waste discharge requirements for discharges of stormwater runoff associated with construction activities).

The RWQCBs oversee implementation and enforcement of the general permits. The Public Works and Development Services Departments of the City of Lake Forest are responsible for overseeing the implementation of permit responsibilities for the City.

The City of Lake Forest is a co-permittee with the County of Orange for local NPDES permits. Municipal permits typically require permittees to develop an area-wide stormwater management plan, implement best management practices (BMPs) and perform stormwater monitoring. BMPs for the County of Orange are identified in the documents supporting the NPDES permits.

It should be noted that on February 13, 2002, the San Diego RWQCB adopted*Order No. R9-2002-0001 (NPDES No. CA S0108740), Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds of the County of Orange, the Incorporated Cities of Orange County, and the Orange County Flood Control District within the San Diego Region.* This order outlines waste discharge requirements that would serve to renew an NPDES permit for the existing discharge of urban runoff. As noted previously, the City of Lake Forest is a co-permittee and is required to comply with the provisions of the order.

The Santa Ana RWQCB which has jurisdiction over the Santa Ana River, adopted *Order No. R8-2002-0010 (NPDES No. CAS618030)*, *Waste Discharge Requirements for the County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County within the Santa Ana Region, Areawide Urban Storm Water Runoff, Orange County* on January 18, 2002.

To implement the requirements of the NPDES permit, the Co-Permittees have developed a 2003 Drainage Area Management Plan ("DAMP") which has been redesigned to serve as the foundation for a series of model programs, local implementation plans, and watershed implementation plans rather than a single document as in the past. The 2003 DAMP was developed through a process that involved public and private sector input and pubic review through the California Environmental Quality Act (CEQA) process.

7.3 THRESHOLDS OF SIGNIFICANCE

SURFACE WATER AND FLOODING

A project would normally have a significant impact if it would:

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff above pre-development condition in a manner which would result in flooding on- or off-site.

- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems.

- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

- Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

- Cause inundation by seiche, tsunami, or mudflow.

- Deposit sediment and debris materials within existing channels obstructing flows.

- Exceed the capacity of a channel and cause overflow during design storm conditions.

GROUNDWATER

A project would normally have a significant impact if it would:

- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

- Adversely change the rate, direction or flow of groundwater.

- Have an impact on groundwater that is inconsistent with a groundwater management plan prepared by the water agencies with the responsibility for groundwater management.

WATER QUALITY

A project would normally have a significant impact if it would:

- Violate any water quality standards or waste discharge requirements.

- Cause a significant alteration of receiving water quality during or following construction.

- Substantially degrade groundwater quality.

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

- Create or contribute runoff water which would generate substantial additional sources of polluted runoff.

- Substantially degrade water quality by discharge which affects the beneficial uses (i.e. swimming, fishing, etc.) of the receiving or downstream waters.

- Increase in any pollutant for which the receiving water body is already impaired as listed on the Clean Water Act Section 303(d) list.

7.4 POTENTIAL MITIGATION

The mitigation measures suggested in this section are examples of the types of mitigation that could be applied to a project to reduce identified water resource impacts. The actual mitigation recommended for a project will vary depending on the nature of the project, the specific impact, and other issues that may arise on a case-by-case basis. It is not intended that each mitigation measure identified in this section be applied to every project or that the mitigation be written exactly as presented herein. Similarly, there may be mitigation required of a project that is not identified in this document.

SURFACE WATER AND FLOODING

- Develop new or improve existing drainage facilities to reduce or retain the amount of peak runoff from the project site. Such measures may include the construction of detention

basins or other structures that will slow down or delay the peak flow of stormwater runoff from the site.

- Reduce impervious surfaces and materials to reduce increases in stormwater runoff.

- Maximize landscaped and natural areas.

- Raise the building pad or ground floor of proposed structures to an elevation at least one foot above the applicable flood surface elevation in flood prone areas.

GROUNDWATER

- Reduce proposed impermeable areas that would result in loss of recharge capacity.

- Avoid areas of shallow groundwater when locating roadways, underground trenches, and buildings to eliminate the need for subsurface foundations.

WATER QUALITY

Short-term Construction Related

- Provide evidence of existing coverage under the General NPDES Permit for Storm Water Discharges Associated with Construction Activities.

- Prepare a stormwater pollution prevention plan (SWPPP) for construction activities, including development of an erosion control plan, slope stabilization requirements, phased grading, revegetation as early as feasible, preservation of natural hydrologic features, preservation of riparian buffers, maintenance of all source control and structural treatment BMPs, and retention and proper management of sediment and other construction pollutants onsite.

Long-term Operational

- Prepare a Water Quality Management Plan (WQMP) which identifies Best Management Practices (BMPs) that will be used on a project site to control predictable pollutant runoff. The WQMP should identify, at a minimum, the routine structural and non-structural measures specified in the Countywide NPDES supporting documents. Structural controls may include, but are not limited to:

  - filtration
  - common area efficient irrigation
  - common area runoff-minimizing landscape design
  - velocity dissipation devices
  - oil/grease separators
  - inlet trash tracks
  - catch basin stenciling

  Non-structural BMP include:

  - education for property owners, tenants and occupants
  - activity restrictions
  - common area landscape management, litter control, and catch basin inspection
  - BMP maintenance

- street sweeping private streets

- Minimize use of directly connected impervious surfaces.
- Use erosion control measures along slopes and channels.
- Provide properly designed outdoor materials and trash storage areas.

7.5 REFERENCES

City of Lake Forest General Plan Recreation and Resources Element revised July 2008.

City of Lake Forest General Plan Safety and Noise Element, June 2001, Prepared by Cotton/Bridges/Associates.

City of Lake Forest Master Environmental Assessment. 1994 (April). Prepared by Cotton/Beland/Associates, Inc.

Orange, County of. Watershed and Coastal Resources Division, Stormwater Program. Orange County, CA: the County. http://www.ocwatersheds.com/StormWater/documents_damp.asp

Order No. R9-2002-0001, NPDES No. CAS0108740, Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds of the County of Orange, the Incorporated Cities of Orange County, and the Orange County Flood Control District Within the San Diego Region. 22002 (February 13). California Regional Water Quality Control Board, San Diego Region.

Order No. R8-2002-0010, *NDPDES No. CAS618030, Waste Discharge Requirements for the County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County within the Santa Ana Region, Areawide Urban Storm Water Runoff, Orange County.* 22002 (January 18). California Regional Water Quality Control Board, Santa Ana Region.

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SECTION 8
LIST OF PREPARERS

8.1 CITY OF LAKE FOREST

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City Attorney Staff, Best Best & Krieger

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Jennifer Marks ..... Environmental Analyst

APPENDIX 2
City of Lake Forest Transportation Analysis Guidelines

July 21, 2020

1. Introduction

1.1 Purpose and Need – The purpose of this document is to establish updated Transportation Analysis Guidelines and achieve compliance with the revised California Environmental Quality Act (CEQA) Guidelines (Cal. Code Regs., Title 14, Div. 6, Ch. 3, § 15000 et seq.) related to Senate Bill 743 (Steinberg, 2013) (Public Resources Code section 21099) and the evaluation of Transportation Impacts.

The City's past practice utilized "level of service" (LOS) as the metric for identifying a proposed project's significant transportation impacts. However, adoption of changes to CEQA means that automobile delay, or LOS, no longer constitutes a significant environmental impact under CEQA[1].

1.2 Background – Under CEQA, administrative regulations and guidelines are set forth that explain how to determine whether an activity (i.e., proposed project) is subject to environmental review, the steps to undertake the review, and the required content of the review. In the past decade, the CEQA Guidelines have been updated on several occasions to better achieve the State's goals of improving air quality and reducing greenhouse gas emissions through transportation planning. The updated CEQA Guidelines, that include sections that were required to be added by SB 743, went into effect in December 2018.

1.3 SB 743 – On September 27, 2013 SB 743 (Steinberg, 2013) was signed into California State Law. SB743 requires that public agencies subject to CEQA modify their methodology for analyzing transportation impacts of land use projects. Generally, SB 743 moves away from using delay-based LOS as the primary metric for determining a proposed project's potentially significant impacts to instead use vehicle miles traveled (VMT). The Governor's Office of Planning and Research (OPR) has prepared a Technical Advisory that provides guidance on evaluating transportation impacts in CEQA documents, using VMT as the metric.

1.4 OPR Technical Advisory – The final OPR Technical Advisory[2] provides a set of recommendations on how agencies can implement the new VMT metric into their planning process, what types of VMT should be considered, methodologies to evaluate VMT, new significance thresholds that may constitute a significant transportation impact, and potential transportation impact mitigation measures. Under the Technical Advisory recommendations, lead agencies have the discretion to set or apply their own thresholds of significance or rely on thresholds recommended by other agencies.

1.5 Lake Forest 2040 General Plan – The City's current 2040 General Plan sets the framework for the City's continued growth and progress for the next 20 years.

Policy M-8.1 in the City's 2040 General Plan Mobility Element aligns with the new CEQA requirements establishing VMT and Transportation Demand Management (TDM) mitigation requirements for purposes of environmental review. As indicated in Policy M-8.1, the City shall continue to maintain LOS standards for the purposes of planning and designing street improvements.

Policy M-8.2 in the City's 2040 General Plan Mobility Element also continues to support the implementation of existing regional efforts such as the employer TDM provision of the South Coast Air Quality District's Air Quality Management Plan (AQMP) and the Orange County Congestion Management Program (CMP).

[1] CEQA Section 15064.3 Determining the Significance of Transportation Impacts, Subdivision (a) Purpose
[2] OPR Technical Advisory on Evaluating Transportation Impacts in CEQA, Governor's Office of Planning and Research, December 2018, http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

2. Process for Transportation Analysis

The Public Works Department and Community Development Department will determine the scope of Transportation Analyses for proposed projects.

There are two components of the Transportation Analysis. The first is a VMT Transportation Analysis that is required by CEQA and the second is a LOS Transportation Analysis that is required by the City's 2040 General Plan for the purposes of planning and designing street improvements. Following is a general outline of the process. Refer to Sections 3.3, 3.4, and 5.0 for detailed descriptions of the approach for VMT and LOS analysis, respectively.

2.1 Process and Scope of Work

The process of identifying the type and level of Transportation Analysis for a proposed project starts at the pre-application or application level. Planning Pre-Applications and Planning Applications are available on the City's website.[3]

Applicants can elect to fill out a pre-application form, submit applicable documents with the completed form and pay applicable fees. While the City encourages, but does not require, pre-applications, the benefit of a pre-application includes receiving technical, written comments regarding the proposed project's potential environmental issues, zoning information and processing procedures. Pre-application review is coordinated by the Community Development staff and comments may be provided by any City division including, but not limited to, Planning, Building & Safety, and Public Works/Traffic Engineering, as well as Orange County Fire Authority.

The level of Transportation Analysis can be determined at the pre-application phase by completing and submitting a Transportation Analysis Screening Form (See Attachment D). Once the form is submitted and all applicable fees are paid, the Community Development Department will determine the level of analysis required per CEQA. If a proposed project is found to not need a full VMT Analysis to satisfy CEQA requirements, a LOS Transportation Analysis may still be required by the Public Works Department. The Public Works Department will determine the scope of the LOS Transportation Analysis.

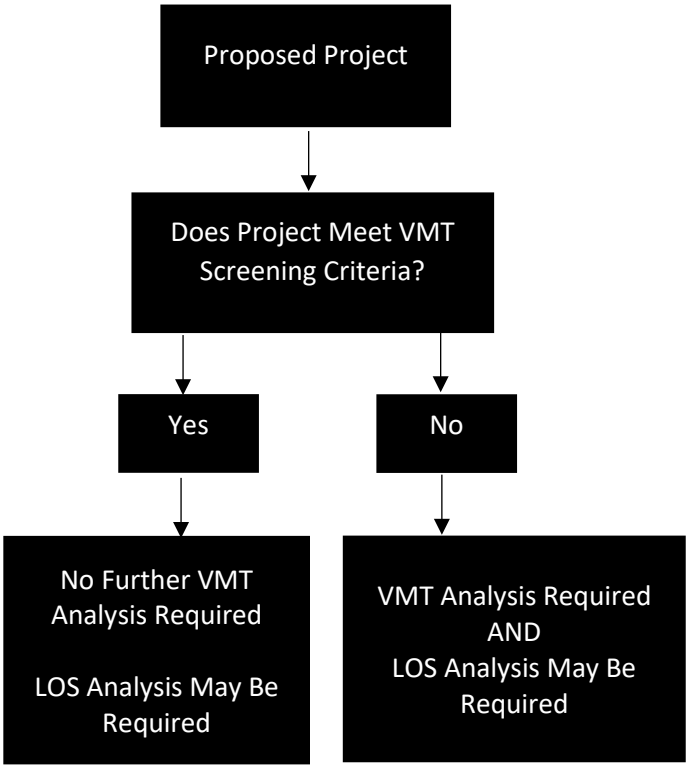
The Transportation Analysis Screening Form includes a series of questions that will help City staff determine if the proposed project meets one of the VMT Transportation Analysis screening criteria. The screening criteria is a quick and efficient way to determine if a proposed project will need a full VMT Transportation Analysis for purposes of CEQA. The pre-application includes questions regarding the project's scope (i.e., units, employees, square-footage), location and prior entitlements. If a pre-application is not submitted, the level of Transportation Analysis required by the proposed project will be determined after the submittal of the Planning Application to the Community Development Department.

Figure 1 demonstrates the process to determine the proposed project's scope of work related to Transportation Analysis.

[3] https://www.lakeforestca.gov/205/Application-Forms

Figure 1 Scope of Work Process

1. Applicant completes a Transportation Analysis Screening Form during the Pre-Application or Application Phase and submits applicable forms, documents and fees
2. The Screening Form quickly identifies if a proposed project will need a VMT analysis. If the proposed project meets one of the screening criteria, a VMT analysis will not be required (see Table 2 for Screening criteria)
3. City Staff will determine if a LOS analysis is required
4. City Staff will notify applicant or applicant's consultant of the required scope of the proposed project's Transportation Analysis



2.2 Transportation Analysis Reviews and Approvals

VMT Transportation Analysis – After a proposed project's scope of work has been determined, the Community Development Department will be responsible for the review of the VMT Transportation Analysis. City staff will determine if the proposed project's VMT Transportation Analysis satisfies the requirements of CEQA and the City's established VMT thresholds and City policies. Staff will provide comments to the applicant or the applicant's consultant, in the event the applicant has retained the traffic engineer responsible for preparing the traffic study.

LOS Transportation Analysis – The Public Works/Traffic Engineering Division will be responsible for the review of LOS Transportation Analyses. LOS Transportation Analysis shall follow the guidance provided by City staff. City staff will provide comments to the applicant or the applicant's consultant.

3. VMT Impact Analysis

3.1 OPR Technical Advisory Recommendations – The OPR Technical Advisory provides recommendations for evaluating VMT, significance thresholds to identify transportation impacts, and mitigation measures that may mitigate a project's significant impact(s) on VMT. The OPR Technical Advisory also states that lead agencies have the discretion to set or apply their own thresholds of significance. Generally, the VMT methodology, significance thresholds, and mitigation measures identified in these Guidelines closely follow the recommendations from the OPR Technical Advisory.

3.2 VMT Methodology

VMT is defined in the OPR Technical Advisory as "the amount and distance of automobile travel attributable to a project… the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks"[4]. Heavy duty vehicles (e.g., medium and large trucks) are not intended to be the subject of VMT analysis; however, it is acceptable to include heavy duty vehicle trips when included by the travel demand model used as a source for VMT data.

When evaluating VMT for residential and office projects, the OPR Technical Advisory recommends that "tour- and trip-based approaches offer the best methods for assessing VMT from residential/office projects and for comparing those assessments to VMT thresholds." It further recommends that when the trip-based method is utilized, the focus is home-based trips for residential projects and home-based work trips for office projects.

For retail projects, total VMT shall be utilized. All other uses that cannot be categorized as residential, office, or retail will be evaluated on a case-by-case basis consistent with the intent of SB 743, which is to reduce overall automobile travel.

Proposed projects may generally be categorized into the following two types:

- Land Use Development Project
- Transportation Improvement Project

Land use development projects include, but are not limited, to residential, commercial, business park, industrial, public facilities and mixed-use developments.

Transportation improvement projects include, but are not limited to, roadway safety projects, roadway widening and traffic calming improvements (additional types of transportation projects are listed in Attachment C).

VMT screening and thresholds for each of the two categories listed above are identified below.

3.3 Land Use Projects

Consistent with the recommendations of the OPR Technical Advisory, screening thresholds may quickly identify whether or not a project should be expected to have a less-than-significant impact without conducting a detailed study. Screening thresholds are provided for the following:

- Small Project Screening
- Map-based Screening for Residential and Office/Employment Projects
- Proximity to High-Quality Transit Screening
- Locally-Serving Retail Screening
- Locally-Serving Public Facility Screening
- Affordable Residential Development Screening

3.3.1 Small Project Screening – Small Projects can be presumed to have a less than significant impact if there is evidence that it would not generate a potentially significant level of VMT and is consistent with the Lake Forest 2040 General Plan, since the Lake Forest 2040 General Plan is consistent with the SCAG RTP/SCS[5].

[4] Page 4 OPR Technical Advisory, December 2018
[5] The Lake Forest 2040 General Plan is consistent with the SCAG RTP/SCS.

A proposed project can demonstrate that it will generate a less than significant level of VMT if the project generates fewer than 110 new daily trips per day[6]. Trip generation estimates are to be prepared using the current version of the Institute of Transportation Engineers Trip Generation Manual.

3.3.2 Map-Based (Low VMT Area) Screening for Residential and Office/Employment Projects – Proposed projects that are located in geographic areas (e.g., traffic analysis zones) that are low VMT generating based on travel demand model data are presumed to exhibit similar VMT and can be presumed to cause a less-than-significant transportation impact.

A map showing the low VMT Traffic Analysis Zones (TAZ)s within the City boundary is provided in Attachment B. Orange County Transportation Analysis Model (OCTAM) 5.0 TAZ zones are utilized. TAZs that are lower than the established thresholds of significance (see discussion in Section 3.3.6) are considered "low VMT" geographic areas.

3.3.3 Proximity to High-Quality Transit Screening – Projects generally within a half mile ("average walking distance") of a major transit stop or a stop located along a high-quality transit corridor may be presumed to cause a less-than-significant transportation impact.

A high-quality transit corridor is defined as a "corridor with fixed route bus service internals no longer than 15 minutes during peak commute hours".[7] A major transit stop is defined as 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 period."[8]

3.3.4 Locally-Serving Retail Screening – Retail projects that serve the local community and generally have local trip-making characteristics are presumed to have a less-than-significant impact on transportation.

Based on the square footage of existing retail development in the City, a retail store that is 50,000 square feet of building floor area or less can generally be considered "local-serving".

3.3.5 Affordable Residential Development Screening – Proposed projects that consist of 100% affordable housing units may be presumed to have a less-than-significant impact on transportation. For proposed projects that have a portion designated for affordable housing, the portion that is designated affordable housing can be presumed to have less-than-significant impact on transportation. The remainder of the proposed project must utilize the VMT thresholds for a residential project.

3.3.6 VMT Analysis and Thresholds – If a proposed project does not meet any one of the screening criteria described above, then a VMT Analysis is required. City staff will determine the scope of the VMT analysis. For most projects that are not expected to cause a measurable change in trip distribution and travel patterns, the following methodology may be appropriate for the proposed project.

The following are steps for a VMT analysis:

1. Based on the proposed project's location, identify applicable LFTAM TAZ (see Attachment B)
2. Using the VMT Look-Up Table [separate excel file], find the following for the applicable LFTAM TAZ(s):
    a. Home-Based VMT per capita for a residential project
    b. Home-Based Work VMT per employee for an office/employment project.

[6] Page 12 OPR Technical Advisory, December 2018
[7] Page 14 OPR Technical Advisory, December 2018
[8] Page 13 OPR Technical Advisory, December 2018

3. Compare LFTAM TAZ VMT data against the applicable VMT threshold:
    a. Citywide Home-Based VMT per capita threshold for a residential project
    b. Countywide HBW VMT per employee for an office/employment project
4. The net difference between the LFTAM VMT per capita and the Citywide (for residential project) or Countywide (for employment project) VMT threshold is the amount to mitigate

If City staff determines that the proposed project is substantial enough to change trip distribution patterns or is not consistent with the existing land use(s) in the immediate area or land use designated in the current 2040 General Plan, then the City may recommend a new model run using the OCTAM model[9] to determine the change in VMT and resulting VMT per capita specific to the proposed project.

For purposes of conducting a VMT analysis, VMT data was collected from OCTAM Version 5.0 on an OCTAM TAZ level. Because each OCTAM TAZ covers a large geographic area within the City, the OCTAM VMT data was disaggregated to the more detailed TAZ level of the City's LFTAM traffic model. The process involved using the LFTAM to calculate VMT trip lengths for each LFTAM TAZ within each OCTAM TAZ. The OCTAM zonal VMT data was then factored based on the proportional differences between the LFTAM zonal trip lengths for each LFTAM TAZ within a given OCTAM TAZ.

Citywide and Countywide VMT thresholds were derived from OCTAM VMT data. For residential projects, OPR's Technical Advisory suggests that a local agency can elect to use a regional VMT per capita or a Citywide VMT per capita. Both regional and Citywide residential VMT per capita were reviewed and the Citywide VMT per capita was determined to best represent existing conditions in the City. For employment projects, the regional VMT per employee is utilized, which is consistent with OPR's Technical Advisory recommendations.

For residential projects, a proposed project that has a Home-Based VMT per capita (resident) that is fifteen percent or more below the Citywide existing baseline Home-Based VMT per capita has a less-than-significant impact on transportation.

For an office/employment project, a proposed project that has a Home-Based Work VMT per capita (employee) that is fifteen percent or more below the Countywide existing baseline Home-Based Work VMT per capita has a less-than-significant impact on transportation.

For retail projects, a proposed project that does not result in a net increase in total VMT (with project conditions minus without project conditions) will be considered to have a less-than-significant impact on transportation.

For mixed-use projects, each use shall be evaluated separately. For the residential portion of the proposed project, the residential VMT thresholds apply. For the office/employment portion of the proposed project, the office/employment VMT thresholds apply. For the retail portion of the project, if the individual retail store(s) are 50,000 square feet or smaller (building floor area) and local-serving, the retail portion is presumed to be locally serving and, therefore, have a less than significant impact on transportation.

Other projects that do not fall under the residential and office/employment categories will be considered on a case-by-case basis. For example, public facilities that are publicly-owned or controlled such as police stations, fire stations, passive parks, libraries, pumping stations, and community centers that are located within established communities and serve local needs, are presumed to cause a less-than-significant transportation impact.

[9] The Orange County Transportation Analysis Model is the regional transportation model maintained by OCTA and is the parent model for the Lake Forest Traffic Model.

For redevelopment projects, if the proposed project does not lead to a net overall increase in VMT compared to the current site land use, the project should be presumed to have a less-than-significant transportation impact. If the project increases VMT, then the thresholds for residential, office/employment and/or retail apply.

3.4 Transportation Improvement Projects

Transportation improvement projects may induce demand and lead to an increase in vehicle travel. The City will work with the applicant on a case-by-case basis during the pre-application or application phase to determine if the proposed project has the potential to induce vehicle travel due to transportation improvements associated with the project.

The OPR Technical Advisory includes a list of transportation projects that are not likely to result in a significant increase in vehicle travel (see Attachment C) and therefore would not need an induced travel analysis. The City will reference the OPR Technical Advisory recommendations when deciding if a proposed transportation improvement project requires an induced travel analysis.

If a transportation improvement project is required to conduct a VMT analysis, the proposed project must not increase the total Citywide VMT over baseline conditions (no project conditions). If there is no net increase in total Citywide VMT, the proposed transportation improvement project would have a less-than-significant impact on transportation.

Active Transportation projects are presumed to have less-than-significant transportation impact. Increase in transit usage should not be deemed an impact on the transit system.

The VMT Thresholds described above are summarized in **Table 2** and **Table 3**.

Table 2 VMT Thresholds

Land Use Development Projects		
Category/Description	**Description**	**Threshold**
Small Project Screening	If substantial evidence supports that a proposed project will not generate a potentially significant level of VMT and is consistent with the Lake Forest 2040 General Plan, the project is presumed to have a less-than-significant transportation impact.	Projects that generate fewer than 110 new trips per day
Map-Based (Low-VMT Area) Screening for Residential and Office/Employment Projects	Projects that are located in geographic areas (traffic analysis zones) that are low-VMT-generating are presumed to exhibit similar VMT and can be presumed to have a less-than-significant transportation impact.	Low VMT TAZs are TAZs that have VMT per capita 15% below the Citywide (for residential projects) or Countywide (for employment projects) existing conditions
Proximity to High Quality Transit Screening	Projects within ½ mile of a major transit stop or a stop located along a high-quality transit corridor reduce VMT and are presumed to have a less-than-significant transportation impact.	½ mile distance from a transit stop or station
Locally-serving retail	Retail projects that are local-serving are presumed to have a less than significant impact on VMT.	Individual retail stores 50,000 sq. ft. or smaller are generally considered local-serving
Locally-serving public facility	Public facilities that are publicly-owned or controlled, such as police stations, fire stations, passive parks, libraries,	Public facility projects that are locally-serving

	pumping stations, community centers, and K-12 schools located within established communities and serving local needs, are presumed to cause a less-than-significant transportation impact. * Schools will be evaluated on a case-by-case basis and will need to demonstrate that enrollment is derived from the surrounding neighborhood(s)	
Affordable Residential Development Screening	Affordable housing may be presumed to cause a less-than-significant transportation impact.	100% of units are affordable housing[1]
VMT Analysis	Residential Project: A significant impact occurs if the proposed project's HB VMT per capita (resident) is greater than fifteen percent below the Citywide existing baseline. Office/Employment Project: A significant impact occurs if the proposed project's HBW VMT per capita (employee) is greater than fifteen percent below the Countywide existing baseline.	Residential Project: 17.5 HB VMT/per capita (resident) 20.5 HBW VMT/per capita (employee)
Transportation Projects		
Category/Description	**Description**	**Threshold**
VMT Analysis	Transportation Projects will be evaluated on a case-by-case basis. The City will reference the OPR Technical Advisory recommendations when deciding if the proposed project requires further VMT analysis	Project does not increase total Citywide VMT over baseline conditions
MPAH Consistency	If the proposed project is consistent with the buildout of the Orange County Master Plan of Arterial Highways (MPAH) network, then the project would have a less-than-significant impact	Consistency with the Orange County MPAH
[1] "Affordable housing cost" for lower-income households is defined in State law as not more than 30 percent of gross household income with variations (Health and Safety Code Section 50052.5)		

Table 3 VMT Thresholds Summary

Land Use Project	
Category	**Threshold**
Residential	17.5 Home-Based VMT per capita (resident)[1]
Office/Employment	20.5 Home-Based Work VMT per capita (employee)[2]
Retail	Net increase in total VMT[3]
Mixed-Use	Evaluate each use with applicable thresholds
Transportation Project	
Category	**Threshold**
Roadway Improvements – Non-Travel Inducing	Presumed less-than-significant impact
Roadway Improvements – Travel Inducing	Net increase in VMT
Active Transportation	Presumed less-than-significant impact
Transit Projects	Presumed less-than-significant impact

[1] The existing Citywide HB VMT per capita is 20.6, OPR's Technical Advisory recommends utilizing a threshold 15 percent below existing conditions, resulting in a HB VMT per capita threshold of 17.5 HB VMT per capita (resident).
[2] The existing Countywide HBW VMT per employee is 24.1, OPR's Technical Advisory recommends utilizing a threshold 15 percent below existing conditions, resulting in a HBW VMT per employee of 20.5 HBW VMT per capita (employee).
[3] With project conditions minus without project conditions

4.0 VMT Mitigation Measures

CEQA requires that feasible mitigation measures that will mitigate a project's environmental impact(s) be identified. Accordingly, if a proposed project causes a significant transportation impact, feasible mitigation measures must be identified.

4.1 Mitigation Resources – Various resources were consulted to determine appropriate mitigation measures. The OPR Technical Advisory provides a list of VMT-reducing mitigation measures.

The California Air Pollution Control Officers Association's (CAPCOA) "Quantifying Greenhouse Gas Reduction Measures" provides various TDM strategies and methods to quantify VMT reductions from TDM strategies.

The California Emission Estimator Model (CalEEMod) is a statewide land use tool that can be used to identify mitigation measures and calculate the benefits from the selected measures. CalEEMod utilizes TDM strategies from CAPCOA, and supplemental calculation methodologies are documented in the California Air Resources Board Quantification Methodology documentation.

4.2 Example Mitigation Measures – OPR's Technical Advisory states that the following measures would result in VMT reductions[10]:

- Improve or increase access to transit
- Increase access to common goods and services, such as groceries, schools, and daycare
- Incorporate affordable housing into the project
- Incorporate neighborhood electric vehicle network[11]
- Orient the project toward transit, bicycle and pedestrian facilities
- Improve pedestrian or bicycle networks, or transit service
- Provide traffic calming
- Provide bicycle parking
- Limit or eliminate parking supply
- Unbundle parking costs
- Provide parking cash-out programs
- Implement roadway pricing

[10] Page 27 OPR Technical Advisory, December 2018
[11] A neighborhood electric vehicles (NEV) is "classified in the California Vehicle Code as a "low speed vehicle". They are electric powered and must conform to applicable federal automobile safety standards. NEVs offer an alternative to traditional vehicle trips and can legally be used on roadways with speed limits of 35 MPH or less (unless specifically restricted). They are ideal for short trips up to 30 miles in length. To create an NEV network, the project will implement the necessary infrastructure, including NEV parking, charging facilities, striping, signage, and educational tools. NEV routes would be implemented throughout the project and would double as bicycle routes." (Source: CAPCOA Site Design Transportation-3 (SDT-3))

- Implement or provide access to a commute reduction program
- Provide car-sharing, bike sharing, and/or ride-sharing programs
- Provide transit passes[12]
- Shifting single occupancy vehicle trips to carpooling or vanpooling (e.g., providing ride-matching services)
- Providing telework options
- Providing incentives or subsidies that increase the use of modes other than single-occupancy vehicle
- Providing on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, and showers and locker rooms
- Providing employee transportation coordinators at employment sites
- Providing a guaranteed ride home service to users of non-auto modes

Mitigation measures that add capacity to a roadway would generally not be considered a mitigation measure since the added capacity has the potential to induce travel demand.

The City will work with the applicant to identify applicable mitigation measures, as a nexus between the project and the mitigation must be present.

4.3 Quantifying VMT Reductions – The location of the proposed project determines the maximum VMT reductions achievable. **Table 4** summarizes the maximum VMT reductions by area type.

Table 4 Maximum VMT Reductions by Area Type

Area Type	VMT Reductions from Land Use Measures	VMT Reductions from Land Use, Parking, and Traffic Calming Measures	Total Maximum VMT Reduction
Transit Oriented Development	65%	70%	75%
Compact Infill	30%	35%	40%
Suburban	5%	10%	15%
Source: CARB Quantification Methodology Strategic Growth Council Affordable Housing and Sustainable Communities Program, November 2019			

The applicant can choose to calculate VMT reductions from TDM strategies by using industry recognized methodologies such as those described in CAPCOA's Quantifying Greenhouse Gas Reduction Measures or utilize tools such as the CalEEMod calculator to calculate a VMT reduction percentage to apply to the project's VMT per capita.

4.4 Level 1 VMT Mitigation Measures

Level 1 mitigation measures include land use and site improvements, and commute trip reduction measures.

[12] Non-physical improvements such as transit passes are often part of a Commute Trip Reduction strategy and are commonly bundled with other trip reduction strategies. Such programs are typically managed by a Transportation Management Association (TMA) and would need to be implemented for the life of the Project. See CAPCOA Trip Reduction Transportation-4 (TRT-4) for more information.

Table 5 lists the potential mitigation measures and the maximum VMT reduction per CAPCOA. Note that although a measure has the potential to provide a maximum VMT percentage reduction, the maximum VMT reductions by area type (previously referenced **Table 4**) would apply.

For example, a mixed-use project in the suburban setting may show evidence that the project meets the criteria for "Increase Density" (maximum VMT reduction of 30%), "Improve Destination Accessibility" (maximum VMT reduction of 20%), Limit Parking Supply (maximum VMT reduction of 12.5%) and Traffic Calming Measures (maximum VMT reduction of 1%). However, if the proposed project is located in a suburban setting, the maximum VMT reductions from land use measures combined with parking and traffic calming measures is 15%. Therefore, the project can take credit for a 15% VMT reduction.

Table 5 VMT Reducing Mitigation Measures

Land Use	CAPCOA Code	Measurement	VMT Reduction
Increase Density[1]	LUT-1	Dwelling Units/acre and Jobs/Job acre	Max 30%
Increase Diversity[2]	LUT-3	Applicable to mixed-use developments only	Max 65%/30%/10% Urban/Infill/Suburban
Improve Walkability Design	LUT-9	Intersections/Square Miles	Max 21.3%
Improve Destination Accessibility	LUT-4	Distance to Downtown/Job Center (Miles)	Max 20%
Increase Transit Accessibility	LUT-5	Distance to Transit Station (Miles)	Max 30%
Integrate Below Market Rate Housing[3]	LUT-6	s% Dwelling Units Below Market Rate	Max 4%
Neighborhood Enhancements			
Improve Pedestrian Network	SDT-1	Project Site or Connecting Off-Site	Max 2%
Provide Traffic Calming Measures	SDT-2	% Streets with Improvement	Max 1%
		% Intersections with Improvement	
Implement NEV Network	SDT-3	Number of NEVs per household	Max 12.7%
Parking Policy/Pricing			
Limit Parking Supply	PDT-1	% Reduction in Spaces[4]	Max 12.5%
Unbundle Parking Costs	PDT-2	Monthly Parking Cost ($)	Max 20%
On-Street Market Pricing	PDT-3	% Increase in Price	Max 5.5%
Transit Improvement			
Expand Transit Network	TST-3	% Increase Transit Coverage	Max 8.2%
Increase Transit Frequency	TST-4	Level of Implementation <50%, >=50%	Max 2.5%
		% Reduction in Headways	
Commute Trip			
Implement Trip Reduction Program	TRT-1, TRT-2	% employee eligible	Max 21%
		Program Type (Required/Voluntary)	
Transit Subsidy	TRT-4	% employee eligible	Max 20%
		Daily Transit Subsidy Amount ($)	
Implement Employee Parking "Cash-out"	TRT-15	% employee eligible	Max 7.7%
Workplace Parking Charge	TRT-14	% employee eligible	Max 19.7%
		Daily Parking Charge ($)	
Encourage Telecommuting and Alternative Work Schedules	TRT-6	% employee work 9/80	Max 5.5%
		% employee work 4/40	
		% employee telecommute 1.5 days	
Market Commute Trip Reduction Option	TRT-7	% employee eligible	Max 4.0%
Employee Vanpool/Shuttle	TRT-11	% employee eligible	Max 13.4%
		% vanpool mode share	
Provide Ride Sharing Program[5]	TRT-3	% employee eligible	Max 15%
School Trip			
Implement School Bus Program	TRT-13	% family using	Max 63%

Source: CAPCOA
[1] Density relative to a typical ITE development: "Default densities are based on the typical suburban densities in North America which reflects the characteristics of the ITE Trip Generation Manual data used in the baseline estimates." (Source: CAPCOA Land Use Transportation-1 (LUT-1))
[2] An increase in diversity is defined as "at least three of the following on site and/or off site within a quarter-mile: Residential Development, Retail Development, Park, Open Space, or Office." (Source CAPCOA LUT-3)
[3] In order to qualify for VMT reductions, "Residential development projects of five or more dwelling units must provide a deed restricted low-income housing component on-site" CAPCOA utilizes a formula to determine the VMT reductions in relation to percentage below market rate. At a low range, 1% below market rate housing equals to .04% VMT reductions. At a At a high range, 30% below market rate housing equals to 1.2% VMT reductions. (Source: CAPCOA LUT-6)
[4] Percentage reduction in conventional parking provision rates (per ITE rates) should serve as a typical ceiling for the reduction calculation. ITE rates are used as baseline conditions to measure the effectiveness of this strategy. (Source CAPCOA PDT-1)
[5] Measure would need to be in place for the life of the Project. CAPCOA states that "the project will include a ride-sharing program as well as a permanent transportation management association membership and funding requirement. Funding may be provided by Community Facilities, District, or County Service Area, or other non-revocable funding mechanism." (Source: CAPCOA TRT-3)

4.5 Level 2 VMT Mitigation Measures

Mitigation Exchange or Mitigation Bank -TBD

4.6 Unmitigated Projects

If a project applicant has worked with the City and has exhausted all mitigation opportunities, the City will work with the applicant to determine if a Statement of Overriding Consideration is appropriate. However, all feasible mitigation measures must be exhausted, including alterations to the project description, if applicable.

5. LOS Transportation Analysis

A proposed project may be required to prepare a LOS Transportation Analysis per 2040 General Plan Policy M-8.1 for the purposes of planning and designing street improvements as well as supporting implementation of the County CMP.

City staff will scope the LOS Transportation Analysis with the applicant or the applicant's consultant. The scope of the LOS analysis may include, but not be limited to:

- Collection of existing intersection and mid-block vehicle count data
- Evaluation of intersections utilizing the intersection capacity utilization (ICU) methodology
- Evaluation of multiple existing, near-term or long-term scenarios
- Identification of proposed and potential roadway improvements
- Calculation of fair-share cost contributions for implementation of improvements that improve LOS

The City's methodology for evaluating intersection performance is generally consistent with the County CMP. The City utilizes a performance standard of LOS D or better and the County CMP utilizes LOS E or better. The performance criteria utilized by the City for a LOS analysis is summarized in **Table 6**.

Table 6 Performance Criteria – LOS Analysis

The following are the performance criteria used for comparing volumes and capacities on the study area street system:

I. Peak Hour Intersection Volumes
Intersection capacity utilization (ICU) values calculated as follows:

Saturation Flow Rate: 1,700 vehicles per hour (VPH).
Clearance Interval: 0.05 ICU

II. Performance Standard
Arterial intersections to achieve LOS D or better (ICU not to exceed .90)

6.0 References

1. Technical Advisory on Evaluating Transportation Impacts in CEQA, Governor's Office of Planning and Research, December 2018.
2. Revised Proposal on Updates to CEQA Guidelines on Evaluating Transportation Impacts in CEQA Implementing Senate Bill 743 (Steinberg, 2013), Governor's Office of Planning and Research, January 20, 2016.
3. Lake Forest 2040 General Plan, City of Lake Forest, June 2020.
4. Quantifying Greenhous Gas Mitigation Measures A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures, California Air Pollution Control Offices Association, August 2010.
5. California Emissions Estimator Model User's Guide, California Air Pollution Control Officers Association (CAPCOA), November 2017.
6. Quantification Methodology Strategic Growth Council Affordable Housing and Sustainable Communities Program California climate Investments, California Air Resources Board, November 1, 2019.
7. Guidance for Administration of the Orange County Master Plan of Arterial Highway, Orange County Transportation Authority, August 2017.
8. 2019 Orange County Congestion Management Program, Orange County Transportation Authority, November 2019.
9. Orange County Transportation Analysis Model Version 5.0, Orange County Transportation Authority, April 2020.

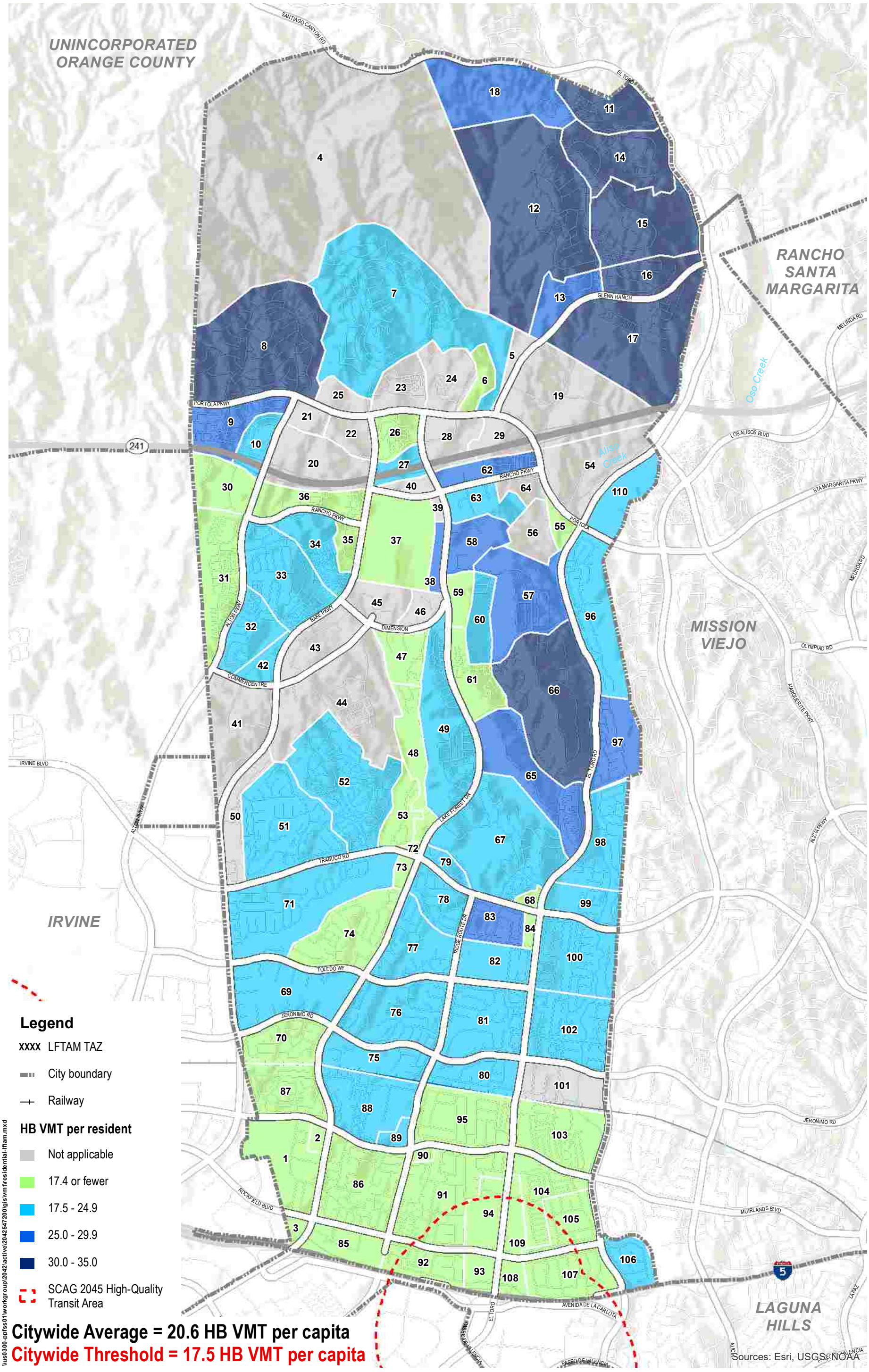
Attachment A1: Map-Based Screening – Residential Project
Attachment A2: Map-Based Screening – Office/Employment Project

Attachment B: List of Transportation Project Not Required to Calculate Induced Demand

Attachment C: Pre-Application VMT Screening Form

Attachment D: Example Projects

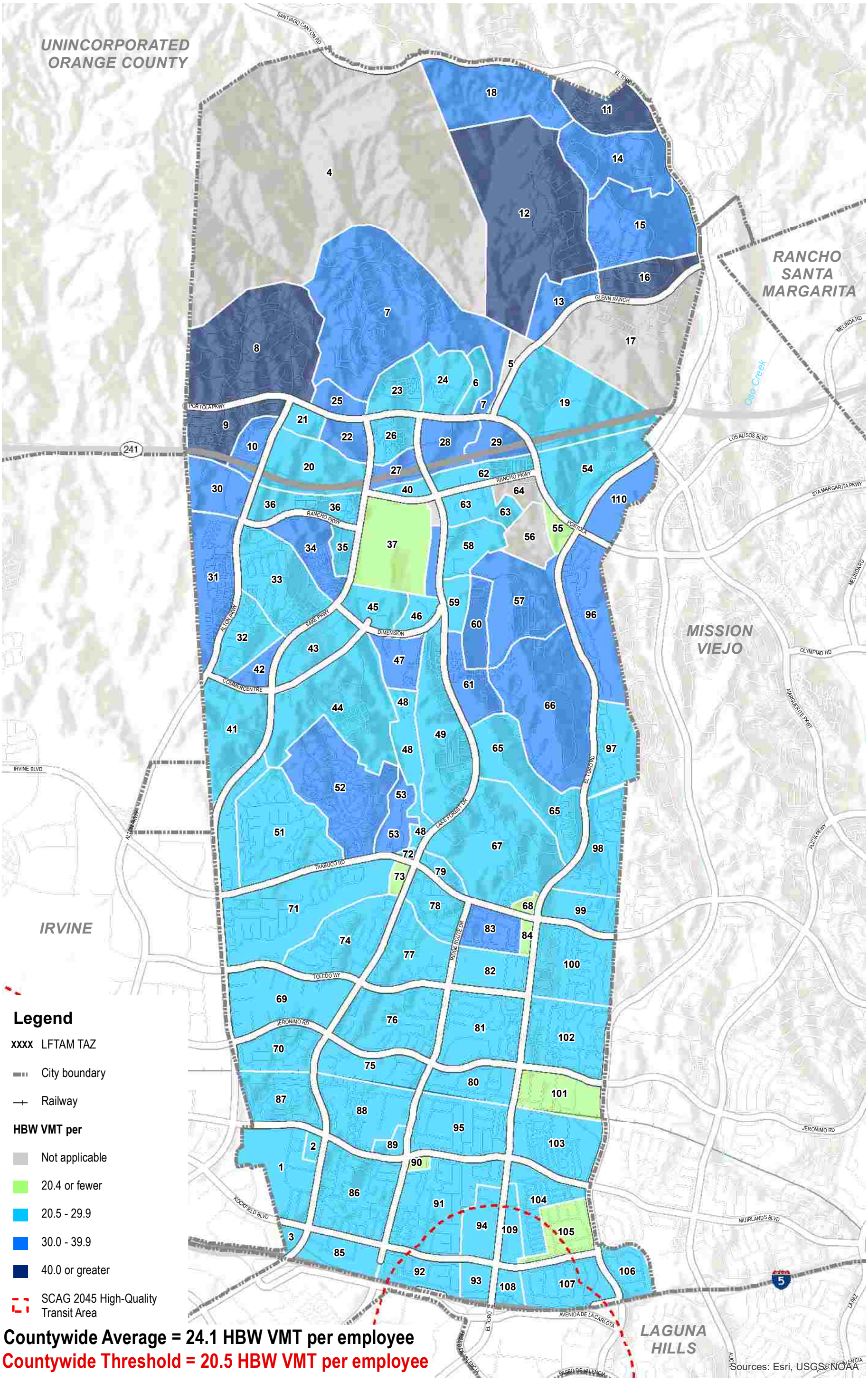
Attachment E: VMT Lookup Tool (Separate file)



ATTACHMENT A-1

Map-Based (Low VMT) Screening - Residential Project

Source: LFTAM & OCTAM



ATTACHMENT A-2

Map-Based (Low VMT) Screening - Non-Residential Project

Source: LFTAM & OCTAM

Attachment B:

The following is a list of Transportation Projects that OPR's Technical Advisory identifies as "not likely lead to a substantial or measurable increase in vehicle travel, and therefore generally should not require an induced travel analysis"[13]:

- Rehabilitation, maintenance, replacement, safety, and repair projects designed to improve the condition of existing transportation assets (e.g., highways; roadways; bridges; culverts; Transportation Management System field elements such as cameras, message signs, detection, or signals; tunnels; transit systems; and assets that serve bicycle and pedestrian facilities) and that do not add additional motor vehicle capacity
- Roadside safety devices or hardware installation such as median barriers and guardrails
- Roadway shoulder enhancements to provide "breakdown space," dedicated space for use only by transit vehicles, to provide bicycle access, or to otherwise improve safety, but which will not be used as automobile vehicle travel lanes
- Addition of an auxiliary lane of less than one mile in length designed to improve roadway safety
- Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, two-way left turn lanes, or emergency breakdown lanes that are not utilized as through lanes
- Addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for pedestrians, cyclists, and, if applicable, transit
- Conversion of existing general purpose lanes (including ramps) to managed lanes or transit lanes, or changing lane management in a manner that would not substantially increase vehicle travel
- Addition of a new lane that is permanently restricted to use only by transit vehicles
- Reduction in number of through lanes
- Grade separation to separate vehicles from rail, transit, pedestrians or bicycles, or to replace a lane in order to separate preferential vehicles (e.g., HOV, HOT, or trucks) from general vehicles
- Installation, removal, or reconfiguration of traffic control devices, including Transit Signal Priority (TSP) features
- Installation of traffic metering systems, detection systems, cameras, changeable message signs and other electronics designed to optimize vehicle, bicycle, or pedestrian flow
- Timing of signals to optimize vehicle, bicycle, or pedestrian flow
- Installation of roundabouts or traffic circles
- Installation or reconfiguration of traffic calming devices
- Adoption of or increase in tolls
- Addition of tolled lanes, where tolls are sufficient to mitigate VMT increase
- Initiation of new transit service
- Conversion of streets from one-way to two-way operation with no net increase in number of traffic lanes
- Removal or relocation of off-street or on-street parking spaces

[13] Page 20, OPR Technical Advisory December 2018

- 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 C: Pre-Application VMT Screening Form

A. SITE INFORMATION

1. PROJECT LOCATION

Street Address[14]:		Unit Number:	
Legal Description (Lot, Block, Tract):			
Assessor Parcel Number(s):		Lot Area 1:	

2. EXISTING USE(S)

Describe in detail the existing condition of, and uses on, the project site, including any major physical improvements/alterations:

B. PROPOSED PROJECT

1. PROPOSED USE(S)

Describe in detail the characteristics, scope and/or operation of the proposed project:

[14] Street Address must include all addresses corresponding to the subject/application site

2. FLOOR AREA

Provide the proposed floor area of residential and nonresidential development:

	Total	Residential	Nonresidential
Floor Area:			

C. PROJECT TEAM INFORMATION (Complete all applicable fields)

Applicant[15] Name		Company/Firm
Address #	Street	Unit/Space Number
City	State	Zip Code
Telephone No.		E-mail:

☐ Same as applicant ☐ Different from applicant:

Property Owner of Record Name		Company/Firm
Address #	Street	Unit/Space Number
City	State	Zip Code
Telephone No.		E-mail:

Optional:

Agent/Representative Name		Company/Firm
Address #	Street	Unit/Space Number
City	State	Zip Code
Telephone No.		E-mail:

[15] An applicant is a person with a lasting interest in the completed project such as the property owner or a lessee/user of a project. An applicant is not someone filing the case on behalf of a client (i.e. usually not the agent/representative).

Optional:

Other (Specify Architect, Engineer, CEQA Consultant etc.) **Name**	Company/Firm	
Address #	Street	Unit/Space Number
City	State	Zip Code
Telephone No.	E-mail:	

Primary Contact for Project Information *(select only one)*	
☐ Owner	☐ Applicant
☐ Agent/Representative	☐ Other

D. TRANSPORTATION ANALYSIS SCREENING

1. PROJECT TRIP GENERATION

Will the project have a net increase of 110 new daily trips? ☐ YES ☐ NO

Please describe:

2. MAP-BASED SCREENING

a. Is the Project located in a low-VMT generating traffic analysis zone? Refer to the VMT Guidelines for instructions on how to identify low-VMT generating areas.

☐ YES ☐ NO

3. RETAIL

a. Does the Project have a retail component? ☐ YES ☐ NO

b. If "Yes", is the retail locally-serving (typically stores less than 50 TSF building floor area)?
☐ YES ☐ NO

If "Yes", please describe:

4. HOUSING

a. Is the Project 100% low-income affordable housing? ☐ YES ☐ NO

5. TRANSIT AND ACTIVE TRANSPORTATION

a. Will the project remove or alter any existing bus stops, pedestrian paths, trails, or bicycle routes?

☐ YES ☐ NO

If "Yes", please describe:

Attachment D: Example Projects

Example #1: Mixed-Use Residential/Retail Project replacing an existing retail site with no existing residential in TAZ zone. Project meets the Low VMT Area screening criteria and a full VMT analysis would not be required.

Project Description: Project X is a mixed-use project and proposes to construct 150 multi-family dwelling units with a total of 65 TSF building floor area retail space. Project X is located in the southwest quadrant of the Bake Parkway and Portola Pkwy intersection. The site is currently occupied with 100 TSF of retail which will be replaced by the Project.

Summary: Project information was submitted during the pre-application phase and the Project components were pre-screened by City Staff. During the pre-application phase it was determined that the Residential component of the Project was in a "low VMT area", meaning the Project is in an area of the City where the existing home-based VMT (HB VMT) is 15% below the Citywide average HB VMT. The retail component of the Project consists of stores that are smaller than 50 TSF of building floor area with a combined total of 65 TSF building floor area of retail space (i.e., dry cleaners, donut shop, coffee shop, grocery store, etc.). Since each retail store is smaller than 50 TSF building floor area, each store can be considered locally-serving. The Project is also consistent with the Lake Forest 2040 General Plan land use. Therefore, the Project is presumed to have a less-than-significant impact on VMT.

Screening Criteria	**Yes/No**
Does the Project generate fewer than 110 new trips per day?	No
Is the Project in a low VMT area?	Yes – Residential use
Is the Project within ½ mile of a major transit route or stop?	No
Is the retail component of the Project locally-serving?	Yes
Is the Project a locally-serving public facility?	No
Is the residential component of the Project 100% affordable housing?	No
Per OPR's Technical Advisory recommendations, if project component meets at least one screening criteria, then that component of the project is presumed to have a less-than-significant impact on VMT	

The applicant is responsible for submitting substantial evidence demonstrating that the two screening criteria have been met for each component of the Project.

Substantial evidence to include in documentation:

For the residential component of the Project, Attachment B-1 is to be used. The Project is located in the southwest quadrant of the Bake Parkway and Portola Parkway intersection which is in traffic analysis zone (TAZ) 22. Since there is no existing residential uses in TAZ 22 the map designated TAZ 22 to have 0 HB VMT per resident. City staff determined that TAZ 26, which is adjacent to TAZ 22, would utilize the same roadways and therefore would be appropriate to presume that the Project would exhibit similar trip patterns. The map shows that TAZ 26 is below the Citywide threshold of 17.5 HB VMT per resident and is therefore in a low VMT area.

The VMT Lookup Table can be used to supplement the map. Using the VMT Lookup Table, residential uses in TAZ 26 generates 15.0 HB VMT per resident, which is below the Citywide VMT Threshold.

LFTAM TAZ	**HB VMT PER CAPITA**
26	15.0
Citywide VMT Threshold	17.5
Above or Below Citywide VMT Threshold	BELOW

Significant Impact?	NO
Required Reduction for Mitigation	--

For the retail component of the Project, the Project proposes to construct a total of 65 TSF building floor area of retail space. The applicant has indicated that the retail component of the project consists of multiple stores that are each smaller than 50 TSF building floor area and are locally-serving. Therefore, the Project would have less than significant impact on VMT.

Lastly, the Project is consistent with the Lake Forest 2040 General Plan that allows for Mixed-Use 43 and Mixed Use 32 use.

In addition to the screening criteria, the applicant is encouraged to demonstrate that the project will not block, remove, or negatively alter existing facilities and amenities that promote the use of transit and active transportation.

Conclusion: The Project would have a less-than-significant impact on VMT because the residential component of the Project was determined to be in a low-VMT generating area, as determined using the map-based screening criteria, and the retail component of the Project consists of retail stores that are smaller than 50 TSF and are therefore locally-serving.

Example #2: Mixed-Use Residential/Retail Project replacing an existing business park site with existing residential in TAZ zone. Project meets the Small Project and the Low VMT Area screening criteria and a full VMT analysis would not be required.

Project Description: Project Y is a mixed-use project and proposes to construct 100 multi-family dwelling units with a combined total of 75 TSF building floor area of retail space. Project Y is located in the southwest quadrant of the Aspan St. and Muirlands Blvd. intersection. The site is currently occupied with a 190 TSF of Business Park which will be replaced by the Project.

Summary: Project information was submitted during the pre-application phase and the Project components were pre-screened by City Staff. During the pre-application phase it was determined that the Project will generate fewer than 110 new trips per day. It was also determined that the residential component of the Project was in a "low VMT area", meaning the Project is in an area of the City where the existing home-based VMT (HB VMT) is 15% below the Citywide average HB VMT. The retail component of the Project consisted of multiple smaller stores that are each 50 TSF building floor area and are locally-serving (i.e., dry cleaners, donut shop, coffee shop, etc.). The Project is also consistent with the Lake Forest 2040 General Plan land use. Therefore, the Project is presumed to have a less-than-significant impact on VMT.

The applicant is responsible for submitting substantial evidence demonstrating that the three screening criteria have been met for each component of the Project.

Screening Criteria	**Yes/No**
Does the Project generate fewer than 110 new trips per day?	Yes
Is the Project in a low VMT area?	Yes – Residential use
Is the Project within ½ mile of a major transit route or stop?	No
Is the retail component of the Project locally-serving?	Yes
Is the Project a locally-serving public facility?	No
Is the residential component of the Project 100% affordable housing?	No
Per OPR's Technical Advisory recommendations, if project component meets at least one screening criteria, then that component of the project is presumed to have a less-than-significant impact on VMT	

Substantial evidence to include in documentation:

To determine the number of new trips per day, average daily traffic (ADT) trip generation estimates are prepared using ADT trip rates from the current version of the Institute of Transportation Engineers Trip Generation Handbook. The Project's estimated trip generation is compared to the trip generation for the existing use. The Project would result in 68 new daily trips, which is below the 110 daily trip threshold.

Category	**Units**	**Amount**	**Trip Rate**	**ADT**
Project				
Multi-Family Residential	DU	100	5.44	544
Retail	TSF	50	37.75	1,888
Total				2,432
Existing				
Business Park	TSF	190	12.44	2,364
Net Difference (Project minus Existing)				+68

For the residential component of the Project, Attachment B-1 is to be used. The Project is located in the southwest quadrant of the Aspan St and Muirlands Boulevard intersection which is in traffic analysis zone

(TAZ) 1. Attachment B-1 shows that TAZ 1 is below the Citywide HB VMT threshold of 17,5 HB VMT per resident.

The VMT Lookup Table can be used to supplement the map finding. The VMT Lookup Table shows that TAZ 1 residences generate 7.5 HB VMT per resident, which is below the Citywide HB VMT threshold of 17.5.

LFTAM TAZ	HB VMT PER CAPITA
1	7.5
Citywide VMT Threshold	17.5
Above or Below Citywide VMT Threshold	BELOW
Significant Impact?	NO
Required Reduction for Mitigation	--

For the retail component of the Project, the Project proposes to construct a combined total of 75 TSF building floor area of retail space. The applicant has indicated that each store is smaller than 50 TSF building floor area and are locally-serving. Therefore, the retail component would have less than significant impact on VMT. Lastly, the Project is consistent with the Lake Forest 2040 General Plan that allows for Mixed-Use 43 use.

In addition to the screening criteria, the applicant is encouraged to demonstrate that the project will not block, remove, or negatively alter existing facilities and amenities that promote the use of transit and active transportation.

Conclusion: The Project would have a less-than-significant impact on VMT because the Project was determined to generate less than 110 net new daily trips. Furthermore, the residential component of the Project was determined to be in a low-VMT generating area, as determined using the map-based screening criteria, and the retail component of the Project consists of retail stores that are smaller than 50 TSF and are therefore locally-serving.

Example #3: Mixed-Use Office/Retail Project replacing an existing office site. Project does not meet the screening criteria. VMT analysis and mitigation is required.

Project Description: Project Z is a mixed-use office project and proposes to construct 300 TSF office space with a total of 25 TSF building floor area of retail space. Project Z is located in the southeast quadrant of the Lake Forest Drive and Rockfield Boulevard intersection. The site is currently occupied with a 150 TSF professional office that will be replaced by the Project.

Summary: Project information was submitted during the pre-application phase and the Project components were pre-screened by City Staff. During the pre-application phase it was determined that the retail component of the Project was determined to be locally-serving. The Project is also consistent with the Lake Forest 2040 General Plan land use. However, the office component of the Project did not meet any of the screening criteria and the office component would require further VMT analysis. The retail portion of the Project is presumed to have a less-than-significant impact on VMT.

Screening Criteria	**Yes/No**
Does the Project generate fewer than 110 new trips per day?	No
Is the Project in a low VMT area?	No
Is the Project within ½ mile of a major transit route or stop?	No
Is the retail component of the Project locally-serving?	Yes
Is the Project a locally-serving public facility?	No
Is the residential component of the Project 100% affordable housing?	No
Per OPR's Technical Advisory recommendations, if project component meets at least one screening criteria, then that component of the project is presumed to have a less-than-significant impact on VMT	

VMT Analysis:

The Project is located in the southwest quadrant of the Lake Forest Drive and Rockfield Boulevard intersection which is in traffic analysis zone (TAZ) 85. The VMT Lookup Table was used to determine the HBW VMT per employee for TAZ 85, which is above the Countywide HBW VMT per employee threshold, and requires mitigation.

LFTAM TAZ	**HBW VMT PER EMPLOYEE**
85 (Project)	24.9
Countywide VMT Threshold	20.5
Above or Below Citywide VMT Threshold	ABOVE
Significant Impact?	YES
Required Reduction for Mitigation	4.4 (17.6%)

For the retail component of the Project, the Project proposes to construct 25 TSF building floor area of retail space. Since the Project square footage is smaller than 50 TSF and is locally-serving, the retail component of the Project would have less than significant impact on VMT. Lastly, the Project is consistent with the Lake Forest 2040 General Plan that allows for Mixed-Use Office use.

Mitigation:

The Project should first determine if mitigation is achievable. The maximum amount of mitigation achievable by a Project is dependent of the Project's location—75% maximum VMT reduction for an

urban setting; 40% maximum VMT reduction for a compact infill; 20% maximum VMT reduction for a suburban center; and 15% maximum reduction for suburban setting[16].

Project Z is located in a suburban center and can have a total maximum VMT reduction of up to 20 percent. To bring the Project's impact to a less-than significant level, the Project needs to reduce VMT by at least 17.6 percent, which is less than the 20 percent maximum reduction allowable for a project in an infill location. Therefore, mitigation to less-than-significant levels may be achievable.

VMT reduction strategies should first be evaluated in the Project's design features. In this case, Project Z would redevelop a traditional professional office use to a mixed-use office space with higher density. CAPCOA's reports that a Project that increases density can reduce VMT by as much as 30 percent (the Project would be capped at 20 percent). The following uses the quantification methodology from CAPCOA's Measure LUT-1 Increase Density:

LUT-1 Increase Density:

% VMT Reduction = A * B

A = (% increase in job per job acre – jobs per job acre for typical ITE development) / (jobs per job acre for typical ITE development)

B = 0.12 (Elasticity of VMT with respect to density)[17]

For this example, Project Z will have 53.5 jobs/acre:

A = (53.5 – 20) / (20) = 1.67 or 167%

167% x 0.12 = .20 or 20%

The increase in density will result in a 20% reduction in VMT.

The 20 percent reduction in VMT is applied to the Project's HBW VMT per employee and results in 19.9 HBW VMT, which is below the Countywide threshold of 20.5. Since the Project increases job density, the Project will have less-than-significant impact on VMT.

Description	**HBW VMT PER EMPLOYEE**
Project	24.9
Mitigation Reduction	20%
Project with Mitigation	19.9
Countywide Threshold	20.5
Above or Below Countywide Threshold	BELOW
Significant Impact?	NO

[16] Chart 6-2 Transportation Strategies Organization, California Air Pollution Control Officers Association Quantifying Greenhouse Gas Mitigation Measures, August 2010, Page 55
[17] Page 156 California Air Pollution Control Officers Association Quantifying Greenhouse Gas Mitigation Measures, August 2010.

Conclusion:

The Project did not meet any of the screening criteria, therefore a VMT analysis was conducted. Using the Lake Forest VMT Look-up Table, the Project's HBW VMT per employee is 24.9 and is above the Countywide threshold of 20.5 HBW VMT per employee. Since the Project HBW VMT is greater than the Countywide threshold, the Project would have significant impact on VMT. To mitigate the Project's impact to a less-than-significant level, the Project was evaluated to determine if the Project had design features that would result in a VMT reduction. CAPCOA's quantification methodology for increased density was utilized to determine that the Project's increased density results in a 20 percent reduction in VMT. With the 20 percent reduction in VMT, the Project's HBW VMT is 19.9, which is below the Countywide threshold of 20.5 HBW VMT. Therefore, there is substantial evidence that the Project would have a less-than-significant impact on VMT.

Example #4: **Project does not meet the screening criteria. VMT analysis and mitigation is required. Project has a significant impact after mitigation opportunities have been exhausted.**

Project Description: Project AA is a hypothetical residential project and proposes to construct a 250-unit multi-family residential project. The site is currently vacant.

Summary: Project information was submitted during the pre-application phase and the Project components were pre-screened by City Staff. During the pre-application phase it was determined that the Project did not meet any of the screening criteria and would therefore require a full VMT analysis.

Screening Criteria	**Yes/No**
Does the Project generate fewer than 110 new trips per day?	No
Is the Project in a low VMT area?	No
Is the Project within ½ mile of a major transit route or stop?	No
Is the retail component of the Project locally-serving?	No
Is the Project a locally-serving public facility?	No
Is the residential component of the Project 100% affordable housing?	No
Per OPR's Technical Advisory recommendations, if project component meets at least one screening criteria, then that component of the project is presumed to have a less-than-significant impact on VMT	

VMT Analysis:

The Project is located in a traffic analysis zone (TAZ) with HB VMT per resident that is above the Citywide HBW VMT per employee threshold and requires mitigation.

LFTAM TAZ	HB VMT per Capita
Project TAZ	40.0
Citywide VMT Threshold	17.5
Above or Below Citywide VMT Threshold	ABOVE
Significant Impact?	YES
Required Reduction for Mitigation	22.5 (56%)

Mitigation:

The Project should first determine if mitigation is achievable. The maximum amount of mitigation achievable by a Project is dependent of the Project's location—75% maximum VMT reduction for an urban setting; 40% maximum VMT reduction for a compact infill; 20% maximum VMT reduction for a suburban center; and 15% maximum reduction for suburban setting[18].

Project AA is located in a suburban setting and can have a total maximum VMT reduction of up to 15% percent. To bring the Project's impact to a less-than significant level, the Project needs to reduce per capita VMT by at least 56 percent, which is greater than the 15 percent maximum reduction allowable for a project in a suburban location. Therefore, mitigation to less-than-significant levels may not be achievable.

[18] Chart 6-2 Transportation Strategies Organization, California Air Pollution Control Officers Association Quantifying Greenhouse Gas Mitigation Measures, August 2010, Page 55

The Project would be required to show how the maximum 15 percent reduction can be achieved, and that all mitigation opportunities have been exhausted.

The applicant will need to document that the Project would have significant and unavoidable transportation impacts and would need to work with the City to determine if a Statement of Overriding Consideration is appropriate and/or feasible.

Conclusion:

The Project did not meet any of the screening criteria, therefore a VMT analysis was conducted. Using the Lake Forest VMT Look-up Table, the Project's HB VMT per resident is 40.0 and is above the Citywide threshold of 17.5 HB VMT per resident. Since the Project HB VMT is greater than the Citywide threshold, the Project would have significant impact on VMT. To mitigate the Project's impact to a less-than-significant level, the Project would need to provide mitigation measures that reduce VMT by 56 percent. The maximum VMT reduction a project can achieve in a suburban setting is 15 percent. Therefore, mitigation is not achievable. The Project would be required to show that all mitigation opportunities have been exhausted. The applicant will need to document that the Project would have significant and unavoidable transportation impacts and would need to work with the City to determine if a Statement of Overriding Consideration is appropriate and feasible.

ATTACHMENT E

SB 743 VMT LOOKUP TABLE

Purpose: The purpose of the SB 743 VMT Lookup Table is to look up Home-Based VMT per resident and Home-Based Work VMT per employee by Lake Forest Traffic Analysis Zone.

Instructions:

1. Fill out project name, location, and project type
2. Refer to LFTAM TAZ map and identify the TAZ that the project is located in
3. Select the LFTAM TAZ from the drop down cell
4. Copy results for use in final documentation

Project Name:	[fill-in]	
Location:	[fill-in]	
Type of Project:	**Select Project Type Here**	<--- click on cell for drop-down
	Select from drop down	

Residential

	LFTAM TAZ	HB VMT PER CAPITA
click on cell for drop-down -->	**Select from drop down**	--
	Citywide VMT Threshold	17.5
	Above or Below Citywide VMT Threshold	--
	Significant Impact?	--
	Required Reduction for Mitigation	--

Employment

	LFTAM TAZ	HBW VMT PER EMPLOYEE
click on cell for drop-down -->	**Select from drop down**	--
	Countywide VMT Threshold	20.5
	Above or Below Countywide VMT Threshold	--
	Significant Impact?	--
	Required Reduction for Mitigation	--

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