



CITY OF PALM DESERT
PUBLIC WORKS DEPARTMENT
INTEROFFICE MEMORANDUM

To: City Staff and Engineering Designers

From: Martin Alvarez, Director of Public Works
John Tanner, Acting City Engineer

Date: February 15, 2023

Subject: **Palm Desert Traffic Impact Analysis Guidelines**

Resolution 2022-74 adopted by the City Council on August 25, 2022 adopts the County of Riverside Transportation Analysis Guidelines for Level of Service and Vehicles Miles Traveled ("TIA Guidelines"). The TIA Guidelines shall apply to land use and transportation projects in the City of Palm Desert.

This memorandum provides further details of the requirements for traffic impact analysis.

All traffic studies submitted to the City of Palm Desert shall be completed by a Traffic Engineer or Professional Engineer registered in the State of California unless otherwise directed by the City Engineer.

SCREENING CRITERIA

Traffic impact studies or focused traffic impact memos for the City of Palm Desert may be required for new development projects. Traffic impact studies will be prepared for all new development projects generating 100 or more peak hour trips as calculated by the screening criteria below. The screening calculation of the peak hour trips shall utilize the Institute of Transportation Engineers (ITE) p.m. peak hour trip generation rates per the most recent Trip Generation Manual. Land use categories and trip generation regression curves are available in the Trip Generation Manual and should be used as applicable.

Focused traffic impact memos to address specific issues, such as site access, may be required at the discretion of the City Engineer for new development projects that will generate:

- Between 50 and 100 peak hour trips; or
- Less than the total peak hour trips associated with the previous existing or approved land use

FOCUSED TRAFFIC IMPACT MEMOS

The purpose of a traffic memo is to compare the trip generation analysis in an environmental document prepared as part of any entitlement already approved to the trip generation analysis for a proposed or amended entitlement. The analysis for the trip generation associated with the proposed or amended entitlement must be based on the most recent trip generation rates published by the Institute of Transportation Engineers or an equally authoritative source as approved by the City Engineer.

If the traffic memo determines that there is an insignificant difference (equal to or less than 100 daily trips or 10 peak hour trips) between the existing entitlement and the proposed or amended entitlement trip generation, no additional traffic analysis will be required. If the difference is larger than 100 daily trips or 10 peak hour trips, a focused analysis in the format of a more comprehensive traffic memo will be required using the appropriate study area consistent with the guidance provided in Table 2 of EB 06-13. and will be prepared as a memo or letter and will follow the same format as above but provide the information in less detail. However, the near-term conditions traffic analysis will only be required for Existing plus Ambient Growth plus Project Opening Year Scenario.

SCOPING FORM APPROVAL & DRAFT REPORT APPROVAL

Preparation of traffic studies for the City of Palm Desert shall begin with the submittal for City approval of a completed scoping form (see Attachment) by the engineer preparing the study. A draft cumulative projects list, if applicable, must also be included with the scoping submittal. This list of planned or entitled projects that could affect the development under review can be obtained from the Development Services Department.

The traffic study should only be initiated after the scoping submittal is approved by the Public Works Department. The scoping submittal will be reviewed by designated Department of Public Works staff and Department of Development Services staff with approval given by the Public Works Director or designee. Scoping submittals may also be reviewed by the City Attorney. The engineer performing the study is encouraged to submit a draft traffic study report for City review and comment prior to the finalization of report conclusions.

The scope of the Traffic Impact Study shall address all applicable requirements of the California Environmental Quality Act (CEQA) and the engineer performing the work should be familiar with these requirements. The scope may be expanded after the initial Scope of Work is approved by the City to address CEQA compliance issues. Questions about CEQA compliance should be addressed to the Development Services Department.

TRAFFIC SIGNAL GUIDANCE

A Traffic Signal Warrant Analysis should be performed at all unsignalized study intersections for each study scenario as part of the traffic impact analysis. Warrant analysis should utilize the most appropriate of eight warrants listed in section 4 of the latest edition of the California Manual on Uniform Traffic Control Devices (CA MUTCD).

The need for traffic signals should also include an analysis for Warrant 6 (Coordinated Signal Systems). This warrant should be applied to locations where adjacent traffic signals do not provide the necessary degree of platooning and where the addition of a new traffic signal will assist in providing progressive signal operation. Normally, this should be considered only at locations that are between 1,300 and 2,600 feet from existing or future traffic signal installations. At locations that are less than 1,300 feet from adjacent traffic signals, new traffic signals will not generally be permitted.

Where applicable, the need for traffic signals should also include an analysis for Warrant 8 (Roadway Network). The signal warrant may be met by an intersection that has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday or has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday).

EXCLUSIVE LEFT & RIGHT TURN LANES

As part of the analysis of Study Intersections, the available storage capacity of existing and proposed auxiliary lanes (i.e. left and right turn pockets) should be reviewed for capacity. At their 95th percentile traffic volume demand level, left-turn lanes should not exceed their storage capacity. Traffic study recommendations for dual left turn lanes should be based on a threshold volume of 250 vehicles per peak hour. Traffic study recommendations for an exclusive right turn lane at an intersection should be based on a threshold volume of 200 vehicles per peak hour.

Deceleration Lane Length shall be designed per Caltrans HDM. In urban areas where cross streets are closely spaced and deceleration lengths cannot be achieved, consult the City Engineer for guidance.

SITE ACCESS

Auxiliary lanes shall be installed on all arterials and higher-order street classifications according to the following criteria:

1. A left-turn deceleration lane with taper and storage length is required for any driveway with a projected peak hour left ingress turning volume estimated to be 25 vehicles per hour (vph) or greater. The taper length shall be included as part of the required deceleration lane length.
2. A right-turn deceleration lane is required for any driveway with a projected peak hour right ingress turning volume estimated to be 50 vph or greater. The taper length shall be included as part of the required deceleration lane length. Pocket storage length requirements shall be based on individual project characteristics.
3. A right-turn deceleration lane should be considered for lower turning volumes on high-volume streets (e.g. Cook Street, Highway 111).
4. A left-turn deceleration lane should be considered for locations where left-turning vehicles would be required to queue in a high speed (\geq 40mph) through lane.
5. Installation recommendations for deceleration lanes and related intersection turning movement distributions shown in the final traffic study report will be subject to approval by the City Engineer.

PROJECT FAIR SHARE

Fair share for intersections at project access points shall be calculated as the ratio of the increase in peak hour turning movement volumes from the project divided by the sum of the existing peak hour turning movements plus peak hour turning movement cumulative development projects. For projects that create significant impacts on other intersections, a percentage of the fair share shall be determined for each location impacted and shall be proportional to the project impacts on the City's facilities.

Fair share for street segments shall be calculated as the ratio of the increase in average daily trips from the project divided by the sum of the existing average daily trips plus average daily trips generated by the cumulative development projects.

Fair share cost of mitigation shall be calculated using the Project Fair Share percentage (P) multiplied by the total cost of mitigation.

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SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This agreement acknowledges the City of Palm Desert requirements for traffic impact analysis of the following project. The analysis must follow Riverside County Transportation Analysis Guidelines for Level of Service Vehicle Miles Traveled dated December 2020 and subsequent revisions.

Case No.: _____
 Other Related Cases: _____
 Project Name: _____
 Assessor's Parcel Number(s): _____
 Project Description: _____

Consultant	Developer
Name: _____	_____
Address: _____	_____
Telephone: _____	_____
Email: _____	_____

A. Trip Generation Source: (ITE Current Edition)

Current GP Land Use: _____	Proposed Land Use: _____
Current Zoning: _____	Proposed Zoning: _____

	Current Trip Generation				Proposed Trip Generation		
	In	Out	Total		In	Out	Total
AM Trips	_____	_____	_____		_____	_____	_____
PM Trips	_____	_____	_____		_____	_____	_____

Internal Trip Allowance: ___ Yes ___ No (____ % Trip Discount)
 Pass-by Trip Allowance: ___ Yes ___ No (____ % Trip Discount)

A pass-by trip discount of 25% is allowed for appropriate land uses. The pass-by trips at adjacent study area intersections and project driveways shall be indicated on a report figure.

Additional Information (Include attachments as needed): _____

B. Trip Geographic Distribution: N % S % E % W %
(attach exhibit for detailed assignment)

C. Background Traffic:

Project Build-out Year: _____
Annual Ambient Growth Rate: _____
Phase Year(s): _____
Other area projects to be analyzed: _____
Model/Forecast methodology: _____

D. Study intersections: (NOTE: Subject to revision after other projects, trip generation/distribution are determined, or comments from other agencies. Map is required. In general, the minimum area to be studied shall include any intersection of 2 or more "Collector" or higher classification streets, at which the proposed project will add 50 or more peak hour trips, not exceeding a 5-mile radius from the project site. The Public Works Department may require deviation from these requirements based on the location.)

- | | |
|----------|-----------|
| 1. _____ | 7. _____ |
| 2. _____ | 8. _____ |
| 3. _____ | 9. _____ |
| 4. _____ | 10. _____ |
| 5. _____ | 11. _____ |
| 6. _____ | 12. _____ |

E. Study Roadway Segments: (NOTE: Subject to revision after other projects, trip generation/distribution are determined, or comments from other agencies. Map is required. In general, the minimum area to be studied shall include any intersection of 2 or more "Collector" or higher classification streets, at which the proposed project will add 50 or more peak hour trips, not exceeding a 5-mile radius from the project site. The Public Works Department may require deviation from these requirements based on the location.)

- | | |
|----------|-----------|
| 1. _____ | 7. _____ |
| 2. _____ | 8. _____ |
| 3. _____ | 9. _____ |
| 4. _____ | 10. _____ |
| 5. _____ | 11. _____ |
| 6. _____ | 12. _____ |

F. Other Jurisdictional Impacts:

Is this project within a one-mile radius of City boundaries? ___ Yes ___ No
If so, name of City jurisdiction: _____

G. Site Plan (Please attach reduced copy)

H. Existing Conditions: (Traffic count data must be less than 2 years old. Provide traffic count dates if using other than 2-year-old counts. Unless otherwise approved by the City Engineer, counts shall be performed during 7-9 a.m. and 4-6 p.m., midday when nearby schools". Seasonal peak factor may be required to be applied to counts taken during the offseason in the Coachella Valley.)

Date(s) of traffic counts: _____

I. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by City)

(NOTE: If the traffic study states that "a traffic signal is/appears to be warranted" (or similar statement) at an existing unsignalized other specific items to be addressed under existing conditions, 8-hour approach traffic volume information must be submitted in addition to the peak hourly turning movement counts for that intersection. Specific items to be addressed are warrant analysis, site access, on-site circulation, parking, consistency with plans supporting bicycles, pedestrians, and transit, and others. Attach proposed analysis scenarios (years plus proposed forecasting approach) and attach a proposed phasing approach if the project is phased.)

Recommended by:	_____	Approved Scoping Agreement:	
		_____	_____
_____	_____	_____	_____
Consultant's Representative	Date	Department of Development Services	Date
		_____	_____
		Department of Public Works	Date

Scoping Agreement Submitted on: _____ Revised on: _____

The City of Palm Desert reserves the right to use, share, and reproduce the information including, but not limited to, traffic counts, exhibits, and surveys provided in all submitted traffic studies and VMT assessments. Changes to the scope of work, site occupancy or use, square footage, and/or permitted activities may require a resubmittal or amendment to the scoping agreement.

***NOTE* Traffic Study Submittal Form and the appropriate fee must be submitted with, or prior to the submittal of this form. Department of Development Services staff will not process the Scoping Agreement prior to receipt of the fee.**

SIGNALIZED INTERSECTION ANALYSIS INPUT PARAMETERS

<u>PARAMETER</u>	<u>VALUE</u>
Base Saturation Flow Rate	1900 pc/hr/ln
Heavy Vehicle factor	Determine % heavy vehicle in existing traffic stream based on count data or consultation with County Transportation Dept. Projects with truck intensive uses must convert project trips to passenger car equivalents (PCE=2). Truck intensive uses include heavy industrial, warehousing or as determined by the Transportation Department.
Grade	Include as appropriate
Exclusive left turn lane	peak hour volume > 100
Dual left turn lanes	peak hour volume > 300
Protected Left Turn Phasing	Left turn volume > 240 vph
Minimum green time	7 seconds each movement in areas of light pedestrian activity. In areas of heavy pedestrian activity, the minimum green shall be calculated based on the methodology in the HCM.
Cycle length	60 sec to 120 sec
Lost time	Per HCM Exhibit 10-17 (below)

Major street	Minor Street	Number of Phases	L (s)
Protected	Protected	4	16
Protected	Permitted	3	12
Permitted	Protected	3	12
Permitted	Permitted	2	8

****NOTE* All above values are from HCM Chapters 10 and 16. Any deviation from these parameters requires prior approval from Riverside County Transportation Department. Refer to HCM for any default values not specifically identified here.***

Intersection analyses should be conducted utilizing acceptable software based on HCM methodology. Closely spaced intersections are to be analyzed using analysis tools capable of accounting for turn lane storage, queue length, blockage, etc. such as Synchro.

Actual signal timing and peak hour factors should be collected in the field and utilized in the existing and near-term analyses. In cases where traffic is added from a significant number of cumulative projects, the consultant shall use their engineering judgment in the application of peak hour factors to maintain consistency with the existing conditions analyses. A peak hour factor of 1.0 shall be applied to buildout traffic condition.

TRAFFIC IMPACT ANALYSIS FORMATTING REQUIREMENTS

The recommended TIA format is as follows:

1. Executive Summary
 - a. Table summarizing significant impacts and mitigation measures
2. Introduction
 - a. Purpose of the TIA and study objective
 - b. Project location and vicinity map (Exhibit)
 - c. Project size and description
 - d. Existing and proposed land use and zoning
 - e. Site plan and proposed project (Exhibit)
 - f. Proposed project opening year and analysis scenarios
3. Methodology and Impact Thresholds
4. Existing Conditions
 - a. Existing roadway network
 - b. Existing traffic control and intersection geometrics (Exhibit)
 - c. Existing traffic volumes – AM and PM peak hour and ADT (Exhibit)
 - d. Existing level of service (LOS) at intersections (Table)
 - e. Existing bicycle facilities (Exhibit)
 - f. Existing transit facilities (Exhibit)
 - g. Existing pedestrian facilities
5. Project Traffic
 - a. Trip generation (Table)
 - b. Trip distribution and assignment (Exhibit)
 - c. Project peak hour turning movements and ADT (Exhibit)
6. Background Conditions (Opening Year) Analysis
 - a. No Project analysis
 - i. Committed (funded) roadway improvements
 - ii. Approved project trip generation (Table, if required)
 - iii. Approved project trip assignment and distribution (Exhibit, if required) me
 - iv. Peak turning movement and ADT (Exhibit)
 - v. Intersection level of service (Table)
 - vi. Roadway segment level of service (Table)
 - b. With Project analysis
 - i. With Project peak turning movement and ADT (Exhibit)
 - ii. Intersection level of service (Table)
 - iii. Roadway segment level of service (Table)
 - iv. Identification of intersection and roadway segment deficiencies

7. Traffic Signal Warrant Analysis
8. Site Access Analysis
9. Safety and Operation Improvement Analysis
10. Active Transportation and Public Transit Analysis
11. Improvements and Recommendations
 - a. Proposed improvements at intersections
 - b. Proposed improvements at roadway segments
 - c. Recommended Improvements categorized by whether they are included in fee plan or not (identify if these improvements are included in an adopted fee program)
 - d. Fair share calculations for recommended improvements
12. Appendix
 - a. Approved scope of work
 - b. Traffic counts
 - c. Intersection analysis worksheets