



# DEPARTMENT OF ENGINEERING & CAPITAL PROJECTS

## ENGINEERING & CONSTRUCTION STANDARDS DIRECTIVE

SUBJECT: TRAFFIC INDEX & PAVEMENT STRUCTURAL SECTION CALCULATIONS

NUMBER: 2024-03

DATE EFFECTIVE: SEPTEMBER 6, 2024

SUPERCEDES: N/A

### **PURPOSE:**

To further clarify the procedures and requirements involved in the design of the pavement structural section of public and private roads in the City of Chula Vista.

### **REFERENCES**

Chula Vista Municipal Code, Chapter 18.08 *Definitions*  
City of Chula Vista, 2012 Subdivision Manual, Section 3-406 *Structural Section Design*  
Caltrans, Highway Design Manual, Chapters 600-680 *Pavement Engineering*

### **PROCEDURES**

The following list is intended to further clarify and provide additional detail to the Structural Section Design procedure as described in the City's Subdivision Manual:

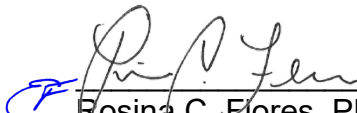
1. The minimum requirements for pavement structural sections defined in Section 3-406 of the Subdivision Manual shall apply to both public and private roads per Section 3-404.3(8) of the Subdivision Manual.
2. The Traffic Index (T.I.) shall be calculated in accordance with the Caltrans Highway Design Manual using ultimate or buildout traffic flow data for the affected road as determined by the City Engineer.
  - a. Buildout traffic volume data may be selected from a variety of sources, at the City Engineer's discretion, including, but not limited to the following:
    - i. SANDAG traffic models
    - ii. City-adopted traffic studies for the affected community
    - iii. Design ADT for the given street classification per the Subdivision Manual
    - iv. Ultimate traffic volume projection based on available ADT data
  - b. Private residential streets, generally, have a design ADT not exceeding 800 vehicles per Section 3-401.1 of the Subdivision Manual.
  - c. The T.I. calculation accounts for a certain number of trucks on the road. The City may specify higher truck percentages based on available data, however, if no other truck data is available, the following minimum truck percentages shall apply:

Street Classification	Minimum Truck Percentage
Residential Cul-De-Sac and Alley/Long Driveway	2%
Residential/Local Street	3%
Class II & III Collector	6%
Class I Collector & Industrial	8%
Major, Prime Arterial & Expressway	10%

- d. Unless otherwise determined by the City, traffic is assumed to be evenly distributed among the travel lanes. Therefore, the T.I. for all travel lanes shall be calculated at the full T.I. value.
- e. The minimum T.I. value for any alley, long driveway, or other similar low volume road, as determined by the City Engineer, shall be 5.0.
- 3. The minimum structural sections for various road classifications listed in Section 3-406 of the Subdivision Manual shall only apply when soils tests for the applicable road(s) determine that the native subgrade material has an R-value equal or greater to 40.
- 4. The design and construction of temporary fire access roads shall comply with the *Temporary Fire Apparatus Access Road Requirements* (April 2024 or latest) as published by the City’s Fire Prevention Division.

The City shall make the final determination as to the appropriateness of the assumptions and methodology used for the T.I. calculation. The required structural section will be reviewed and approved by the City on a project-by-project basis.

**APPROVED:**

  
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 Rosina C. Flores, PE  
 Acting City Engineer

09/05/2024  
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 DATE

*Laura C. Black*  
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 Laura C. Black, AICP  
 Director of Development Services

09/06/2024  
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 DATE