

**CITY OF SAN BERNARDINO**  
**DEPARTMENT OF PUBLIC WORKS**  
**TRAFFIC DESIGN POLICIES AND PROCEDURES**  
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## **DIVISION I — AUTHORITY**

This policy paper is prepared to serve as a guide for the preparation of traffic reports, traffic related improvement plans and to assist the developer in preparing information and plans that meet the criteria of the City of San Bernardino.

It does not replace the Standard Drawings and is not intended to be all inclusive. It provides the minimum level expected on a project, but all projects must be based on sound engineering judgement and be acceptable to the Director of Public Works/City Engineer.

Authority for the traffic policy is contained in the City of San Bernardino municipal Code in the following sections:

- Section 2.14
- Section 3.26
- Title 10
- Title 12
- Development Code

In addition to the above, the City of San Bernardino has adopted a General Plan with the Circulation Element, area plans, overlay zoning, the "Standard Specifications for Public Works Construction" (Green Book), Caltrans Standard Specifications and its own Standard Drawings for Public Works Improvements. Also, the City uses as a standard reference the Manual of Uniform Traffic Control Devices, the ITE Trip Generation Report, the ITE Parking Report, Caltrans Traffic Design Manual, 1985 Highway Capacity Manual, AASHTO manuals, WATCH manual, CAPSSI and PASSER programs and its own transportation planning program, based on TRANPIAN.

The referenced code sections also refer to many varied resolutions and ordinances adopted by the Mayor and common Council in which fees are established, including a traffic systems fee, for services or-impacts.

This authority is established as the minimum requirement of the City of San Bernardino with all material subject to the review and approval of the Director of Public Works/City Engineer for conformance to acceptable design practices and sound engineering judgement. All plans and reports must receive approval of the Director of Public Works/City Engineer prior to approval of the project and for the recordation of any maps.

## **DIVISION II -- DESIGN CRITERIA**

### **A. Design**

- 1 Street widths shall be per the adopted City Standards and Circulation Element of the Master Plan of Streets.
- 2 City standard travel lane widths should be as follows:

a	Traffic Lane on arterial or collector	12 feet
b	Traffic Lane on arterial or collector adjacent to curb	14 feet
c	Traffic Lane on residential street	10 feet
d	Left Turn Lane	12 feet
e	Two-way Turning Lane	12 feet
f	Parking Lane	8 feet
- 3 The minimum acceptable lane width in the City shall not be less than 10 feet unless written approval is obtained from the Director of Public Works/City Engineer.
- 4 In areas where there is a raised median island, no openings shall be permitted in the median other than at street intersections. Medians are established for the control of traffic.
- 5 Transitions between differing curb widths or as required for pavement joins shall conform with standard Caltrans computational methods as detailed in Section 6-25 of the Caltrans Design Manual.
- 6 Sight distance at intersections shall be as detailed in Ordinance MC-783 and per Exhibit "A". No fencing, planting materials or obstructions that cause a sight obstruction of any kind will be permitted to be over 30 inches high, as measured from the flow line of the curb and gutter, in the front or side yard setback area - or in the sight distance areas as detailed in Exhibit "A1.
- 7 Plantings or signs in median islands must be checked for visual obstructions resulting from temporary alignment of the proposed improvements.

### **B. Traffic Reports**

As a part of the project review process, the Environmental Review Committee or the Development Review Committee may identify concerns for the need for a traffic study and report. The Traffic

Engineer under the authority of the Director of Public Works/City Engineer will make the final decision on the need for a traffic study or report as a condition of the development. These reports are made necessary by the size, configuration or impact of the proposed development.

Listed below are some basic criteria that may be used to assess the probability of having to complete a traffic report as a part of the project review process. It is not a complete or exhaustive list, but is intended to give guidelines as to when such an extensive report is to be prepared and to assist in the development of such a report by indicating the necessary components of the submitted report.

1 General Criteria

- a Any project that adds more than 10% additional trips to the adjacent street system at full build out of the project. No allowance will be made for attraction or capture trip ends.
- b Any project that generates more than 500 daily trip ends residential, or 1000 trip ends commercial or industrial, as determined by the average trip rate as contained in the ITE Trip Generation Report.
- c Any project that has the potential to degrade the existing street system or signal system to level of service D or lower during peak hour using operational analysis on any selected movement.
- d Any project that generates more than 40% of its total traffic in the form of truck traffic.
- e Any project that intensifies the usage of the site above the level currently allowed by zoning codes and requires a CUP, zone change or other discretionary permit.
- f Any project that has a peak hour volume exceeding 75 trip ends.

2 Report Contents

Traffic Reports submitted for review and approval must contain the following items as a minimum:

- a Total number of trips anticipated from the project based on the average trip generation rates as contained in the ITE Trip Generation Report for total build out of the project.

- b Project traffic on the adjacent street system projected for five (5) years or to project build out, whichever is longer.
- c Traffic projections on the adjacent street system for I both the project and "normal" background growth (5.% per year or as detailed in the General Plan) with consideration to approved projects for the specific area.
- d Traffic projections shall include the additional impact of undeveloped land within 1,500 feet or as detailed in the General Plan.
- e Impacts on adjacent intersections using an intersection capacity analysis.
- f Trip distribution and assignment analysis with justification on the percentages for directional travel and/or turning movements.
- g Analysis of pedestrian movement and/or generation and need for additional crossings or facilities. .
- h Parking requirements and information on peak loading of the transportation network if applicable.
- i Existing and proposed signal phases, progression and/or coordination.
- j Traffic counts. Traffic counts must be current (within one year) and must be machine counts of suitable length for analysis of the project.
- k Recommendations and conclusions of the report with the proposed mitigation measures listed in priority order.
- l Signal warrants shall. be established using existing traffic at the intersection plus the project traffic, using a minimum of an 8-hour actual count at the intersection.

### **DIVISION III -- GUIDELINES AND FORMAT FOR REPORTS**

#### **A. Reports**

Generally, traffic reports will be submitted under separate cover in an acceptable 8-1/2 x 11 inch format. Reports are generally typewritten with diagrams for traffic distribution assignment or intersection analysis. The report needs to be properly identified and related to the project by

reference to the Review of Plan Number, Tract Number, CUP number, Parcel Map, variance or other identifying City reference numbers in addition to the project description.

The report must be signed by a Registered Civil Engineer and carry the seal and original signature of the engineer preparing the report and taking responsibility for the information contained therein.

A preliminary review with the City Traffic Engineer is encouraged. Focused reports may be justified but must be coordinated with the City Traffic Engineer on larger projects or those that wish to use the Tranplan model.

In general, the following should be included in the report:

- a Identification of project and reference to city identification numbers such as CUP, RP or Tract.
- b Seal and original signature of engineer preparing report and taking responsibility for the report.
- c Executive summary of the project and report contents. This should be one half page or less.
- d Identification of existing traffic and transportation system and level of service.
- e Traffic to be generated by development.
- f Projected background growth and combined total of growth plus development with level of service listed for intersections.
- g Identified impacts on transportation system from any source. Identify degradation of system below level of service C.
- h Mitigation measures recommended to address impacts of the development or development plus background growth.
- i Conclusion which covers the alternatives of no project, project with existing traffic and project with existing traffic and background growth.
- j Submittal shall be made to the Director of Public works/City Engineer. Three copies of drafts shall be submitted. Three copies of the final report shall be submitted after

- notification by the Traffic Engineer that the report is acceptable.
- k All backup data used in the preparation of the report shall be included in the submittals.
- l A listing of all assumptions used in the report with special identification of any unusual conditions from the project or area identified.

#### **DIVISION IV -- GUIDELINES AND FORMAT FOR CONSTRUCTION PLANS**

- 1 Sheet size is 24 x 36 inches.
- 2 Plan to show the following (minimum)
  - a Vicinity Map
  - b North Arrow
  - c Scale
  - d Existing improvements and proposed signing marking and signal improvements.
  - e Legend - Topo and Construction
  - f General Notes
  - g Engineer's Signature
  - h License number and expiration date
  - i Details
  - j Stationing and Dimensions.
- 3 Submit 2 sets of plans for checking

#### **C General Notes (on all Plans)**

- 1 All work shall be in accordance with the Standard Specifications for Public Works Construction (Green Book), latest edition, with all supplements and City of San Bernardino Standard Drawings.
- 2 Approval of this plan by the City of San Bernardino does not constitute a representation as to the the accuracy of the location or of the existence or nonexistence of any underground utility pipe or structure within the limits of this project. The Contractor shall assume full responsibility for the protection of all utilities within the limits of the project. Contractor shall contact Underground Service Alert 48 hours prior to start of work.

- 3 Inspection shall be by the City of San Bernardino Department of Public Works. All requests for inspection shall be made at least 24 hours in advance of the proposed construction.
- 4 All existing pavement markings that are being relocated or removed shall be removed by sand blasting. No black-over painting of lines is permitted in the City.
- 5 During the period of construction, the Contractor shall furnish, erect and maintain such warnings, signs, stop signs, barricades and other safety measures in conformance with the W.A.T.C.H manual or other City reference manuals listed.

D Additional notes that may be used as warranted by specific projects.

- 1 The Contractor shall provide safe and continuous passage for local pedestrian and vehicular traffic at all times.
- 2 Should any of the existing utilities, or any other facilities, conflict with the proposed improvement the Contractor shall notify the Engineer and await the relocation and/or provide an alternate design.
- 3 The Contractor shall so conduct his operations as to offer the least possible obstruction and inconvenience to the public.
- 4 In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work and the Contractor shall fully comply with all state and Federal laws, rules, regulations, and orders relating to safety to the public and workmen.
- 5 Dust shall be controlled at all times by approved methods.
- 6 Public streets shall be kept clean and free from dirt and/or debris. The Contractor shall be responsible for all costs incurred in street cleaning necessitated by his operations.
- 7 Full street closure will not be permitted unless prior written approval is obtained from the Director of Public Works/City Engineer. Detour plans must be submitted for approval for all street closures and may be required for other types of detours under some circumstances. 48 hour notice will be required to the City and affected property owners prior to any closure.

- 8 On arterial streets, all full lane closures will require submittal of detour plans and/or signing plans with prior written approval by the Director of Public Works/City Engineer.

E Notes to Traffic Striping Plan.

- 1 Materials shall comply with Sub. Sec. 210-1.6, "Paint for Traffic Striping, Marking and Curb Marking", of the Standard Specification for Public Works Construction (Greenbook) latest edition or equal supplement.
- 2 Traffic Paint shall be Fast Dry, Solvent Borne, Low Volatile Organic Compound (VOC) 250 unless otherwise specified.
- 3 Thermoplastic paint when specified shall be ReflectORIZED Alkyd.
- 4 New striping applications shall be done in two (2) coats.
- 5 Traffic control shall be according to the Work Area Traffic Control Handbook (WATCH) manual latest edition.
- 6 Raised Pavement Markers (RPM) when specified shall be consistent with CALTRANS Standard Specification Sec. 85, "Pavement Markers", latest edition.

Any such additional notes that may be required for the completion of the plans and construction.

**DIVISION V -- REVIEW AND APPROVAL**

Reports or plans shall be submitted to the Department of Public Works for review and approval. Plans and reports need to be submitted in a timely manner to insure adequate review and comment prior to Environmental Review, Development Review or submission to the Planning Commission or Mayor and Common Council.

Generally, traffic reports require a minimum of two (2) weeks of review time before the scheduled meeting. Items continued pending submission of the report still require two weeks review time. Failure of the developer or his agent to submit in a timely manner will result in the continuance of the matter to the next regular meeting.

Two copies need to be submitted for review to the Public Works Department. Additional copies may be required by other departments for file copies. Materials must be submitted to the Director of

Public Works/City Engineer and it shall be the responsibility of the City to insure the City Traffic Engineer receives his copy. Consultants may wish to discuss the traffic report or obtain information from the City Traffic Section during the preparation phase of their project. They should contact the Traffic Engineer or Traffic Engineering Section directly for information and/or design criteria.

### **DIVISION VI — CHECKLIST**

Show on plans:

- |   |   |
|---|---|
| <input type="checkbox"/> Vicinity map         | <input type="checkbox"/> North Arrow            |
| <input type="checkbox"/> Scale                | <input type="checkbox"/> Existing Improvements  |
| <input type="checkbox"/> Proposed Signing     | <input type="checkbox"/> Proposed Signal        |
| <input type="checkbox"/> Legends              | <input type="checkbox"/> General Notes          |
| <input type="checkbox"/> Engineer's Signature | <input type="checkbox"/> Engineer's License No. |
| <input type="checkbox"/> Details              | <input type="checkbox"/> Stationing             |
| <input type="checkbox"/> Dimensions           | <input type="checkbox"/> Right-of-Way           |
- Street Names in conformance with approved maps
- Pavement markings in accordance with standards
- Sight distance per policy guidelines
- Intersection separation in accord with policy
- Quantities of signs and striping shown or provided
- Driveway location in relation to BCR checked
- Traffic report submitted if required
- Mitigation measures listed in report shown

### **FEES AND PERMITS**

- Pay plan check fee
- Pay permit fee

City of San Bernardino  
Department of Public Works/City Engineer  
Traffic Design Policies and Procedures

Issued June 30, 1991

\_\_\_\_\_ Inspection Fee

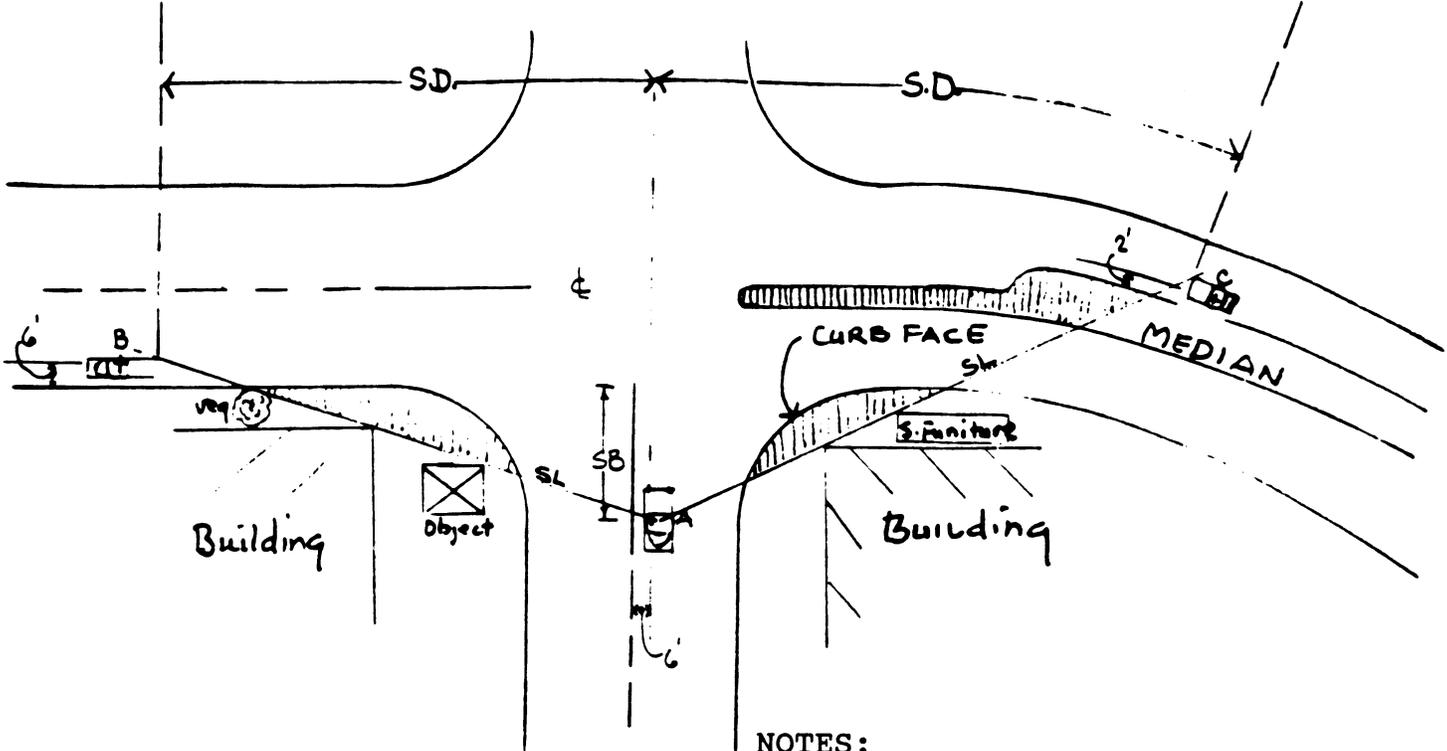
\_\_\_\_\_ Pay mitigation fee if required

\_\_\_\_\_ Traffic Systems Fee

\_\_\_\_\_ Permit issued

\_\_\_\_\_ Other department notified

\_\_\_\_\_ Plan approved by City Engineer



**NOTES:**

1) SB = 18' at intersections  
 SB = 10' at driveways  
 (Under special conditions lesser SB. Values may be approved by Traffic Engineer)

2) V = Speed (MPH) = 85th Percentile i.e., prevailing speed or as determined by Traffic Engineer

3) S.D. = Minimum Sight Distance

Speed = V (MPH)	Minimum Sight Distance (feet)
30	300
35	350
40	400
45	450
50	500
55	550

5) SL = Line of Sight

5) ///// = Area of Limited Use

\*\*Refer to the City of San Bernardino Traffic Engineering Policy Paper for further detail.

- (a) There shall be no obstruction within the limited use area. Area of limited use shall be determined geophysically using appropriate distances given in the Minimum Sight Distance Table (4).
- (b) Obstructions shall include, but not be limited to, any signs or objects higher than 2.5' measured from pavement within the area of limited use. Example, block walls, utility vents, and cabinets, sign street furnitures, mature landscaping, etc.
- (c) Developer's Engineer shall evaluate and show sight lines at proposed intersections/driveways, grading plans, tentative tract maps and landscaping plans where sight distance is questionable.
- (d) Where existing sign, vegetation or objects constitute a sight distance hazard, property owner or occupant shall be notified/-required to meet minimum sight distance requirements within 15 days and maintain same thereafter.

**SIGHT DISTANCE REQUIREMENTS AT CONTROLLED INTERSECTIONS AND DRIVEWAYS**