

POLICY ON DESIRABLE LEVELS OF SERVICE FOR STATE HIGHWAY  
SYSTEM STREETS AND HIGHWAYS IN URBAN AREAS  
Approved by Planning Board May 21, 1962  
Amended and Updated October 29, 1997

It is the intent of this policy to provide guidance on the desirable levels of service for State Highway System streets and highways within urban areas. The levels of service are stated in terms of desirable average travel speeds during peak traffic conditions. The acceptable average travel speeds are shown in Table 1. **These are to be used as guides in the determination and evaluation of State Highway System performance and for improvements proposed in urban areas.**

YES  
The street and highway system within our urban areas are composed of many different types of streets. The principle factors involved in placing streets into appropriate classifications are the travel desires of auto, truck, and transit users; the access needs of adjacent land development; the network pattern of existing streets; and existing and proposed land use. To provide greatest efficiency and service, some streets must give preference to movement, others to access; and some must serve both of these essential needs. External and through traffic should be accommodated on a system of thoroughfares which interconnect rural highways and all major traffic generators in accordance with the travel desire patterns of the area. Most access needs of a community should be satisfied by a local street system giving direct service to residences, commercial establishments, industries, and other land uses.

For the purpose of this policy, urban streets are separated into three principle categories - 1) major thoroughfares, 2) minor thoroughfares, and 3) local streets. The principle function of the major thoroughfares is to carry traffic, although some streets within this category may also provide service to abutting property. The minor thoroughfares have a dual function of serving both traffic and providing direct access to abutting property. A local street provides direct access to property and serves local traffic movements. There are several sub-classifications for major thoroughfares and two for minor thoroughfares which more clearly define functions. The classification of urban streets is summarized as follows:

Major Thoroughfares:

- a) **Freeway** - A freeway is a divided multilane roadway providing for the continuous flow of vehicles with no direct access to abutting property. Access to selected crossroads is only by way of interchanges. A **primary freeway** is designed to carry large volumes of longer distance or through traffic at higher operating speeds (45-55MPH in urban areas). The design speed for a primary freeway is 60-70MPH and the minimum desirable interchange spacing in urban areas is one mile. A freeway that serves principally

local urban area traffic is an **urban freeway**. The urban freeway provides for the continuous flow of traffic at lower operating speeds (45-55MPH). The minimum design speed for an urban freeway is 55 MPH and minimum desirable interchange spacing is 1/2 mile.

- b) **Parkway** - A divided multilane roadway designed for non-commercial traffic, with full or partial control of access. Interchanges are provided at major intersections and there are no traffic signals. Design speed is 50 MPH.
- c) **Expressway** - A divided multilane roadway designed to carry heavy volumes of traffic with partial control of access. There will be little or no access to abutting property. Access to service roads and local streets will be right turn in and right turn out. Interchanges are provided at major street intersections. Design speed is 50-55MPH.
- d) **Urban Arterial** - A major street with intersections at grade and direct access to abutting property, and on which geometric design and traffic control measures are used to expedite the safe movement of through intra-urban and inter-urban traffic. The urban arterial may be a multilane roadway; may have grass or barrier type median, or middle left turn lane; will generally have traffic signal control at major intersections; and may have some interchanges at intersections with other major facilities.

Minor Thoroughfares: A street providing a service of collecting traffic from local access streets and carrying it to the major thoroughfare system. Minor thoroughfares may be used to supplement the major thoroughfare system by providing for minor through traffic movements. They will also generally serve abutting property. A street which serves as a connector street between local land service streets and the thoroughfare system is called a **Collector Street**.

Local Street: A street providing for direct access to abutting property, and for local traffic movements.

The level of service provided by any street or highway is a function of the freedom of movement and comfort or ease of movement experienced by traffic using the facility. The ability of traffic to drive at a desired speed is dependent upon the physical design of the street; the amount and character of traffic on the street; the location, number, spacing, and type of control of intersections; the influence and character of traffic generated by abutting property; and the legal speed restrictions imposed on the street. The level of service is generally reflected by the average travel speed experienced by the traffic.

The desirable levels of service for State Highway System streets and highways in urban areas are given in Table I.

Table I

Desirable Levels of Service For State Highway System Streets and Highways Within Urban Areas

Street Classification	Average Travel Speed\ a During Peak Traffic Conditions		
	Suburban Areas	Intermediate Areas	Central Business Area
<u>Major Thoroughfares</u>			
Primary Freeway	50-60MPH	50-55MPH	45-55MPH
Urban Freeway	45-55MPH	45-55MPH	45-50MPH
Parkway	40-45MPH	40MPH	35MPH
Expressway	45MPH	35-45MPH	30-35MPH
Major Arterials	35-45MPH	30-40MPH	20-30MPH

a/ The average travel speed is the total distance traversed divided by the total time required, including all traffic delays.

The desirable level of service in terms of average operating speeds during peak travel periods for Minor Thoroughfares, Collector Streets, and Local Streets is in accordance with local policies since these streets are normally the responsibility of the respective municipality.

Based on data contained in American Association of State Highway Official's Policy on Geometric Design of Highways and Streets, 1994 and the current "Roadway Design Manual" the relationship of recommended minimum design speeds to average travel speeds is shown in Table II. The minimum design speeds shown in Table II are applicable only to segments of projects where unusual or difficult design and/or right-of-way problems occur. **The desirable design speed should be adhered to in all other cases.** Corridor design speed should be selected based on average travel speed in the off peak condition as this will be the prevailing condition. Also, the design speed should desirably be five miles per hour greater than the posted or average travel speed. In all cases, each individual project should be designed on the basis of the desirable level of service to be provided together with a thorough consideration of engineering, environmental, and economic aspects.

Table II

Average Travel Speeds and Design Speeds For Urban Major Thoroughfares

Average Travel Speeds (MPH)		Design Speeds (MPH)					
Peak Conditions	Off-Peak Conditions	Major Arterials		Partial Control of Access		Full Control of Access	
		Minimum	Desirable	Minimum	Desirable	Minimum	Desirable
20	30	30	35	—	—	—	—
25	35	35	40	—	—	—	—
30	40	40	45	40	45	—	—
35	50	50	55	50	55	50	55
40	55	55	60	55	60	55	60
45	65-60	—	—	60	65	60	65
50	55-60	—	—	60	65	60	65
55	60	—	—	60	70	60	70
60	65	—	—	—	—	65	70

Note: The Desirable Design Speed should be consistent with the speed a driver is likely to expect.

The Minimum Design Speed is the lowest speed that should be used when the desirable design speed cannot be attained due to topography, right of way, or other speed limiting constraints.

Metric

Average Travel Speeds and Design Speeds For Urban Major Thoroughfares

Average Travel Speeds (km/h)		Design Speeds (km/h)					
Peak Conditions	Off-Peak Conditions	Major Arterials		Partial Control of Access		Full Control of Access	
		Minimum	Desirable	Minimum	Desirable	Minimum	Desirable
30	50	50	55	—	—	—	—
40	55	55	60	—	—	—	—
50	60	60	70	60	70	—	—
55	80	80	90	80	90	80	90
60	90	90	100	90	100	90	100
70	90-100	—	—	100	105	100	105
80	90-100	—	—	100	105	100	105
90	100	—	—	100	110	100	110
100	105	—	—	—	—	105	110

Note: The Desirable Design Speed should be consistent with the speed a driver is likely to expect.

The Minimum Design Speed is the lowest speed that should be used when the desirable design speed cannot be attained due to topography, right of way, or other speed limiting constraints.