102 DESIGN VEHICLES

For primary roadway projects, the design vehicle will be a WB-12 intermediate semi trailer combination. For secondary and local roads, the design vehicle will be a single unit bus. The design vehicles are as defined in a "A Policy on Geometric Design of Highways and Streets", AASHTO, 1994. Refer to Section 405 for additional information on design vehicles.

103 DESIGN TRAFFIC

103.01 DESIGN PERIOD

Geometric design of new facilities should be based on estimated traffic 20 years after completion of construction unless otherwise directed by the Road Section.

Safety, resurfacing, restoration, rehabilitation, and operational improvement projects should be designed using current traffic volumes with consideration for future growth.

103.02 RELATION TO DESIGN

The design designation is a simple, concise expression of the basic factors controlling the design of a given roadway. Following is an example of this expression:

ADT (2000) = 9800 D = 60%
ADT (2020) = 20,000 T = 12%
DHV = 3000 V = 110 kph,

where:

ADT (2000) = The average daily traffic, in number of vehicles, for the construction year.

ADT (2020) = The average daily traffic for the future year used as a target in design.

DHV = The two-way design hourly volume, vehicles.

D = The percentage of the DHV in the direction of heavier flow.

T = The character of the traffic. This is expressed by the truck increment (T) as a percent of the DHV (excluding recreational vehicles).

V = Design speed in kph.

Within a project, one design designation should be used except when:

(a) The design hourly traffic warrants a change in the number of lanes, or
(b) A decided change in topography dictates a change in design speed.

The design designation should appear on the typical cross section for all new roadway construction projects.

104 ROADWAY CAPACITY

104.01 DESIGN CAPACITIES

Design capacity is the maximum volume of traffic for which a projected roadway can provide a selected level of service. Design capacity varies with a number of factors, including:

(a) Level of service selected.
(b) Width and number of lanes.
(c) Weaving sections.
(d) Presence or absence of, and width of, shoulders.
(e) Grades.
(f) Horizontal alignment.
(g) Operating speed.
(h) Lateral clearance.
(i) Side friction generated by parking, drive ways, intersections, and interchanges. Volumes of trucks, buses, recreational vehicles, bicycles and pedestrians.
(j) Percentage of trucks, buses, and recreational vehicles.
(k) Spacing and timing of traffic signals.

Design capacity is based on the factors above, design year traffic and operation at a specified level of service (LOS).

Broadly defined, in terms of traffic flow, LOS A is associated with free flow traffic; LOS B indicates reasonable free flow; LOS C is stable operation; LOS D is lower range of stable flow; LOS E is unstable flow; and LOS F indicates forced flow.

Design levels of service for various conditions are shown in Table 100.02. The highest feasible LOS should be selected and used for design, except