6 Highway Networks

The travel model uses coded representations of the Sacramento region's highway network, which provides the basis of estimating zone-to-zone travel times and costs for the trip distribution and mode choice models and for trip routing in the vehicle assignments. The highway network serves not only as the basis of highway travel times and traffic assignments, but also as the basis of bus running times and zonal walk- and drive-access for transit travel time and assignment. This section provides an overview of the coding of the highway network.

6.1 Opening and Editing the Highway Network

SACSIM's highway network is a Cube NET file. To open and edit the file, use Cube Base modeling software.

Table 6-1 lists the network variables used in the SACSIM highway base network. Most link attributes are intuitive and modelers can use Table 6-1 as a reference for coding updates to the highway network. However, the conventions for coding the CAPCLASS values are more nuanced and we recommend users refer to the sections below on Capacity Class and Other Highway Network Characteristics.

Table 6-1 SACSIM Highway Network Variables

Property (SACSIM variable name)	Convention
SPEED (Free Flow Speed)	"Free-flow" speed, or average travel speed with no congestion.
DISTANCE	Link distance (miles).
CAPCLASS (Capacity Class Code)	Points to a lookup table of capacity values, in vehicles per hour per lane.
USECLASS	0 = General-purpose lane 2 = Restricted to vehicles with 2+ occupants 3 = Restricted to vehicles with 3+ occupants
LANES	Number of through-lanes in the link's direction
SPDCURV (Speed-flow Curve Selector)	1 = Freeway 2 = Two-Lane Transitional Roadway 3 = Urban/Suburban Arterial
DELCURV (Ramp Meter Indicator)[1]	0 = Not Metered 1 = AM 3 hours only 2 = PM 3 hours only 3 = AM and PM periods (6 hours) 4 = AM, Midday, and PM periods (12 hours) 5 = Metered 24 hours
HOVLINK (Access Codes for Path Building and Assignment)	0 = All trips permitted 1 = Walk and bicycle trips only 2 = HOV-only facility in freeway[2] 3 = HOV-only bypass lane at metered on-ramp
BIKE (Type of bicycle route or facility present on link)	0 = No bike lane 1 = Class 1 bike route 2 = Class 2 bike route 3 = Class 3 bike route 8 = Surface street over- or under- crossing of a freeway, with ramps present, and NO bike lane 9 = Same as type 8, but WITH Class 2 bike lane

Notes:
1 – Only DELCURV values 0, 1, and 2 were used in 2020 MTP-SCS submission
2 – HOVs, or high-occupancy vehicles are vehicles with two or more occupants.