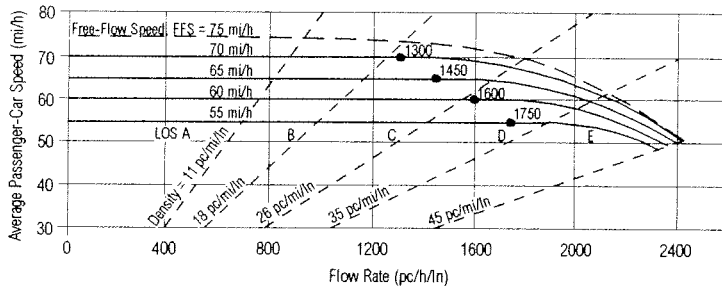


BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p , S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p , S, D

General Information

Site Information

Analyst _____
 Agency or Company _____
 Date Performed _____
 Analysis Time Period _____

Highway/Direction of Travel _____
 From/To _____
 Jurisdiction _____
 Analysis Year _____

Operational (LOS) Design (N) Design (v_p) Planning (LOS) Planning (N) Planning (v_p)

Flow Inputs

Volume, V _____ veh/h Peak-hour factor, PHF _____
 Annual avg. daily traffic, AADT _____ veh/day % Trucks and buses, P_T _____
 Peak-hour proportion of AADT, K _____ % RVs, P_R _____
 Peak-hour direction proportion, D _____ General terrain _____
 DDHV = AADT * K * D _____ veh/h Level Rolling Mountainous
 Driver type Commuter/Weekday Recreational/Weekend Grade Length _____ mi Up/Down _____ %

Calculate Flow Adjustments

f_p _____ E_R _____
 E_T _____ $f_{HV} = \frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$ _____

Speed Inputs

Calculate Speed Adjustments and FFS

Lane width _____ ft f_{LW} _____ mi/h
 Rt.-shoulder lateral clearance _____ ft f_{LC} _____ mi/h
 Interchange density _____ l/mi f_{ID} _____ mi/h
 Number of lanes, N _____ f_N _____ mi/h
 FFS (measured) _____ mi/h FFS = BFFS - f_{LW} - f_{LC} - f_{ID} - f_N _____ mi/h
 Base free-flow speed, BFFS _____ mi/h

LOS and Performance Measures

Operational (LOS) or Planning (LOS)	Design (N) or Planning (N) 1st Iteration
$v_p = \frac{V \text{ or DDHV}}{PHF * N * f_{HV} * f_p}$ _____ pc/h/ln	N _____ assumed
S _____ mi/h	$v_p = \frac{V \text{ or DDHV}}{PHF * N * f_{HV} * f_p}$ _____ pc/h/ln
D = v_p / S _____ pc/mi/ln	LOS _____
LOS _____	Design (N) or Planning (N) 2nd Iteration
Design (v_p) or Planning (v_p)	N _____ assumed
LOS _____	$v_p = \frac{V \text{ or DDHV}}{PHF * N * f_{HV} * f_p}$ _____ pc/h/ln
v_p _____ pc/h/ln	S _____ mi/h
V = $v_p * PHF * N * f_{HV} * f_p$ _____ veh/h	D = v_p / S _____ pc/mi/ln
S _____ mi/h	LOS _____
D = v_p / S _____ pc/mi/ln	

Glossary

Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits 23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-9, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design-hour volume			