I-5 PA&ED HOV & TRUCK LANES – SR-14 TO PARKER ROAD
Traffic Study

07-LA-5, PM R 45.4/R 59.0
EA 2332E0

Prepared by:

Austin-Foust Associates, Inc.
2223 Wellington Avenue, Suite 300
Santa Ana, California 92701-3161
(714) 667-0496

October 30, 2007

Contents

Page

Figures

Page

Tables

Page

I-5 PA&ED HOV & TRUCK LANES – SR-14 TO PARKER ROAD
Traffic Study

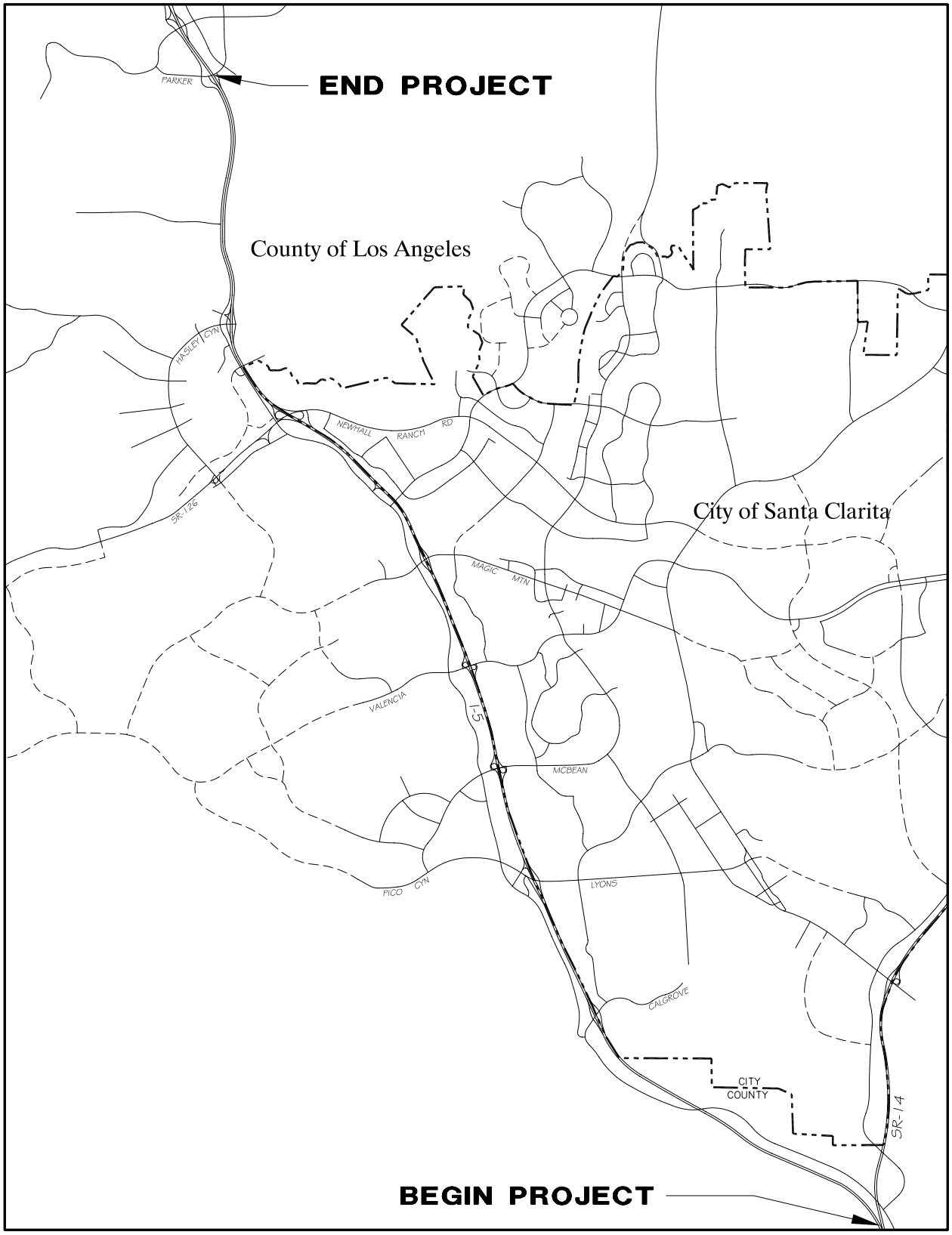
The information presented here comprises a Project Approval and Environmental Document (PA&ED) Traffic Study for the addition of High Occupancy Vehicle (HOV) lanes and Truck lanes for the I-5 freeway in the Santa Clarita Valley (07-LA-5, PM R 45.4/R 59.0, EA 2332E0). The purpose is to provide supporting material for the PA&ED being prepared for this segment of roadway.

1.0 PROJECT DESCRIPTION

The project proposes to add one HOV lane in each direction on I-5 from the State Route 14 (SR-14) interchange at the southern project limit north to Parker Road. The project also proposes to add truck climbing lanes in each direction from the SR-14 interchange to Calgrove Boulevard (northbound) and Pico Canyon Road/Lyons Avenue (southbound). Full auxiliary lanes are proposed between the following interchanges: 1) northbound direction between Valencia Boulevard and Magic Mountain Parkway, 2) southbound direction between Valencia Boulevard and McBean Parkway, and 3) northbound direction between Calgrove Boulevard and Pico Canyon Road/Lyons Avenue.

The project segment of I-5 crosses the City of Santa Clarita, the unincorporated community of Castaic and other parts of unincorporated northern Los Angeles County. This section of I-5 serves interstate travel, travel between Southern and Central/Northern California, as well as local and commuter travel for the Santa Clarita Valley. The project location is illustrated in Figure 1.

The full project is anticipated to be completed around 2014. Additionally, an Early Implementation Project (EIP) consisting of the southbound truck climbing lane between Pico Canyon Road/Lyons Avenue and SR-14 and the extension of the northbound HOV lane from SR-14 to the summit just north of SR-14 is anticipated to start construction around 2009. Subsequently, traffic volume forecasts have been prepared for the following three future horizon years: 2030, which represents the current Regional Transportation Plan (RTP) horizon year and the project design year; 2010, to evaluate opening day conditions for the Early Implementation project; and 2015, to evaluate opening day conditions for the full project. The Highway Capacity Manual (HCM) methodology is utilized to determine Level of Service (LOS) estimates for each horizon year, with and without the proposed project.



Legend

Existing Roadway
Future Roadway

Figure 1

PROJECT LOCATION

2.0 EXISTING CONDITIONS

A summary of existing conditions has been compiled from multiple sources, including published Caltrans data and field surveys by Austin-Foust Associates, Inc. and Korve Engineers. Table 1 summarizes the current lane geometry and grade for the project area.

The I-5 generally consists of four mixed-flow lanes in each direction through the project area, with the exception of through the midpoint of the SR-14 interchange where there are three mixed-flow lanes in each direction. Two truck lanes in each direction pass through the SR-14 interchange area separated from the mainline. Within the project area, this truck bypass route begins/ends just north of the interchange.

The grade through the project area varies from flat to +/- five percent.

A summary of existing (2006) mainline traffic volumes, peak hour by direction and ADT, and the percentage of trucks is provided in Table 2. Traffic count data from multiple sources (as noted in the table) for both the mainline and ramps were used to prepare this comprehensive summary of present day conditions. A detailed listing of mainline and ramp volumes is provided in Appendix A.

Observations of vehicle occupancies were made by Korve Engineers in April 2005 for the segment of I-5 between SR-14 and Calgrove Boulevard. The observations were taken from the Weldon Canyon Road overcrossing during AM and PM time periods, and are summarized in Table 3. The data indicates that average vehicle occupancies for this segment of freeway currently range between 1.3 and 1.4 persons per vehicle. These observations equate to approximately 27 percent of vehicles qualifying to use a HOV (2+ persons/vehicle) lane and just 6 percent of vehicles qualifying to use a 3+ persons/vehicle lane.

LOS for each segment of freeway has been estimated using the HCM methodology for basic freeway segments. A basic freeway segment can be characterized by three performance measures: density in terms of passenger cars per mile per lane, speed in terms of mean passenger-car speed, and volume-to-capacity (v/c) ratio. Each of these measures is an indication of how well traffic flow is being accommodated by the freeway.

Table 1: Existing (2006) Lanes and Grade

I-5 Segment	Southbound		Northbound	
	Lanes	**Grade**	**Lanes**	**Grade**
Between Lake Hughes Road & Parker Road PM 59.49 – 59.01	4 MF	Flat	4 MF	Flat
Between Parker Road & Hasley Canyon Road PM 59.01 – 56.6	4 MF	-1.0%	4 MF	1.0%
Between Hasley Canyon Road & SR-126 PM 56.6 – 55.48	4 MF	Flat	4 MF	Flat
Between SR-126 & Rye Canyon Road PM 55.48 – 54.16	4 MF	Flat	4 MF	Flat
Between Rye Canyon Road & Magic Mountain Parkway PM 54.16 – 53.57	4 MF	Flat	4 MF	Flat
Between Magic Mountain Parkway & Valencia Boulevard PM 53.57 – 52.47	4 MF	2.8%	4 MF	-2.8%
Between Valencia Boulevard & McBean Parkway PM 52.47 – 51.44	4 MF	3.7%	4 MF	-3.7%
Between McBean Parkway & Lyons Avenue/Pico Canyon Road PM 51.44 – 50.33	4 MF	-2.5%	4 MF	2.5%
Between Lyons Avenue/Pico Canyon Road & Calgrove Boulevard PM 50.33 – 49.03	4 MF	Flat	4 MF	Flat
Between Calgrove Boulevard & SR-14 PM 49.03 – 45.58	4 MF	5.1%	4 MF	-5.1%
Through the SR-14 Interchange PM 45.58	3[1] MF + 2 T[2]	-4.5%	3 MF + 2 T[2]	4.5%

[1]4th Southbound Mixed-Flow lane becomes a trap lane to the Northbound SR-14 Connector.
[2]Truck bypass route rejoins the mainline south of the SR-14 interchange.

MF = Mixed-Flow Lane
T = Truck Lane
HOV = HOV Lane

Table 2: Existing (2006) Traffic Volumes

I-5 Segment	% Trucks (Daily)	AM Peak Hour		PM Peak Hour		ADT
		SB	NB	SB	NB	
North of Parker Road	26.6%	1,600	1,190	2,040	2,250	65,000
Between Parker Road & Hasley Canyon Road	20.8%	2,210	1,570	2,420	2,790	83,000
Between Hasley Canyon Road & SR-126	17.3%	3,110	2,170	3,010	3,620	100,000
Between SR-126 & Rye Canyon Road	15.3%	3,420	3,340	4,150	4,080	124,000
Between Rye Canyon Road & Magic Mountain Parkway	14.2%	4,200	3,340	5,350	4,080	134,000
Between Magic Mountain Parkway & Valencia Boulevard	12.2%	4,490	4,490	5,600	5,270	156,000
Between Valencia Boulevard & McBean Parkway	10.6%	5,310	5,430	6,420	6,050	179,000
Between McBean Parkway & Lyons Avenue/Pico Canyon Road	10.1%	5,730	5,560	6,450	6,610	189,000
Between Lyons Avenue/Pico Canyon Road & Calgrove Blvd.	9.5%	6,320	5,620	6,460	7,020	199,000
Between Calgrove Boulevard & SR-14	9.4%[1]	6,610	5,600	6,410	6,970	202,000
South of SR-14	8.6%	13,270	7,390	9,180	13,710	325,000

[1] Peak Hour Truck Percentages (2005 Survey): AM NB = 7.0%; AM SB = 8.2%; PM NB = 6.5%; PM SB = 6.7%

Sources: Korve Engineering, Mainline Counts (Peak Hour), April 2005
Austin-Foust Associates, Inc., Ramp Counts (Peak Hour), 2004-2006
Korve Engineering, Mainline Truck Counts (Peak Hour), April 2005
Caltrans, Mainline AADT, 2005
Caltrans, Ramp Volumes ADT, 2005
Caltrans, AADT Daily Truck Traffic, 2004
Caltrans, Count Station Data (Hourly), 2003

Table 3: Average Vehicle Occupancy Survey

Location	Time	Direction	People per Vehicle			Average Vehicle Occupancy
			1	2	3+	
I-5 at Weldon Canyon Rd.	9:30-9:45 am	NB	378	139	58	1.44
I-5 at Weldon Canyon Rd.	9:30-9:45 am	SB	279	67	12	1.25
I-5 at Weldon Canyon Rd.	3:15-3:30 pm	SB	271	91	15	1.32
I-5 at Weldon Canyon Rd.	6:30-6:45 pm	NB	511	127	31	1.28
Total Vehicles			1,439	424	116	1.33
National Average – To or From Work						*1.14*
National Average – Social and Recreational						*2.03*
National Average – All Purposes						*1.63*

Percentage of observed vehicles that qualify to use a *2 or more persons per vehicle* carpool lane: 27%

Percentage of observed vehicles that qualify to use a *3 or more persons per vehicle* carpool lane: 6%

Sources: Korve Engineering, Mainline Vehicle Occupancy Surveys for I-5 at Weldon Canyon Road, April 2005
U.S. DOT/FHWA, *2001 National Household Travel Survey*, December 2004

The measure used to provide an estimate of LOS is density. The three measures of speed, density and flow or volume are interrelated. LOS thresholds for a basic freeway segment are summarized in Table 4.

Table 4: LOS Thresholds for a Basic Freeway Segment

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	>11 – 18
C	>18 – 26
D	>26 – 35
E	>35 - 45
F	>45
Source: HCM 2000	

As stated in the HCM, the upper value shown for LOS E (45 pc/mi/ln) is the maximum density at which sustained flows at capacity are expected to occur. Failure, breakdown, congestion, and LOS F occur when queues begin to form on the freeway. Density tends to increase sharply within the queue and may be considerably higher than the maximum value of 45 pc/mi/ln for LOS E.

When demand conditions exceed capacity, forced flow results and the formulas used for estimating density and average speed are no longer applicable. As such, estimates for density and average speed are not provided for LOS F conditions due to this limitation of the HCM methodology.

A summary of the HCS operational analysis for existing conditions is provided in Table 5. HCS worksheets are provided in Appendix C for the EIP segments and in Appendix D for the remaining segments.

Observations of the four lane southbound segment of I-5 between Pico Canyon Road/Lyons Avenue and the start of the truck bypass route at SR-14 indicate that the outside lane is used exclusively by trucks. Because of this, the segment has been evaluated by two methods to determine an approach that best reflects the observed conditions. First, the segment was evaluated in the traditional manner as a four lane segment with the measured percentage of trucks. This method calculates LOS D for most time periods except south of Calgrove during the AM peak hour, which is indicated as LOS E. Second, the segment was evaluated as a three lane segment with the fourth lane serving as a truck climbing lane for approximately 80 percent of the trucks. This method indicates LOS E for each peak hour time period for the segment between Pico Canyon Road/Lyons Avenue and Calgrove Boulevard, and LOS F between Calgrove Boulevard and SR-14. This second method has been determined to be more consistent with the observed conditions.

Table 5: LOS Summary - Existing Conditions

I-5 Segment	AM Peak Hour			PM Peak Hour		
	Speed	Density	LOS	Speed	Density	LOS
Northbound						
Lake Hughes to Parker	70.0	5.2	A	70.0	9.9	A
Parker to Hasley Canyon	70.0	6.7	A	70.0	11.9	B
Hasley Canyon to SR-126	70.0	13.1	B	70.0	17.2	B
SR-126 to Rye Canyon	70.0	13.9	B	70.0	17.0	B
Rye Canyon to Magic Mountain	70.0	13.9	B	70.0	16.9	B
Magic Mountain to Valencia	70.0	18.4	C	68.5	25.4	C
Valencia to McBean	69.6	22.3	C	68.5	25.3	C
McBean to Pico	69.1	24.0	C	65.4	30.2	D
Pico to Calgrove	69.4	23.1	C	64.9	30.8	D
Calgrove to Truck Route Bypass	69.5	22.9	C	65.3	30.3	D
Truck Route Bypass to SR-14 Ramp (On)	69.9	20.5	C	63.3	32.8	D
SR-14 Ramp (On) to SR-14 Ramp (Off)	70.0	18.3	C	68.0	26.2	D
Southbound						
Lake Hughes to Parker	70.0	7.0	A	70.0	8.9	A
Parker to Hasley Canyon	70.0	9.5	A	70.0	10.4	A
Hasley Canyon to SR-126	70.0	9.1	A	70.0	12.7	B
SR-126 to Rye Canyon	70.0	14.2	B	70.0	17.3	B
Rye Canyon to Magic Mountain	70.0	17.4	B	69.6	22.3	C
Magic Mountain to Valencia	70.0	19.5	C	68.8	24.7	C
Valencia to McBean	69.1	24.1	C	64.7	31.1	D
McBean to Pico	69.3	23.6	C	67.4	27.2	D
Pico to Calgrove	61.1	35.5	E	58.6	38.3	E
Calgrove to Truck Route Bypass	<53.3	>45.0	F	<53.3	>45.0	F
Truck Route Bypass to SR-14 Ramp (On)	70.0	19.3	C	70.0	19.6	C
SR-14 Ramp (On) to Balboa	70.0	24.7	C	69.3	23.4	C

3.0 PROJECT ANALYSIS - 2030 CONDITIONS

The Santa Clarita Valley is a rapidly growing portion of the Southern California area. Southern California Regional Government (SCAG) projections for the Santa Clarita Valley are summarized in Table 6. The table shows that population is expected to increase by 103 percent and employment is expected to increase by 78 percent over the 28 year period between 1997 and 2025.

The rapid growth noted above for the Santa Clarita Valley is due to significant amounts of ongoing new land use development that is anticipated to continue to occur as the valley builds out over the next 25 years. Table 7 summarizes land use and vehicle trip generation statistics for 2004 and buildout conditions. The table shows that Average Daily Traffic (ADT) generation within the Santa Clarita Valley is forecast to increase by 99 percent between present day and valley wide buildout.

Table 6: Demographic Projections – Santa Clarita Valley

Demographic	1997	2025	Total Growth 1997-2025	Percent Growth 1997-2025
Santa Clarita Population	175,529	356,861	181,332	103%
Santa Clarita Employment	58,029	103,250	45,221	78%

Source: SCAG Regional Forecasts, 2001

Table 7: Land Use and Trip Generation Projections - Santa Clarita Valley

		2004		Long-Range Cumulative (Buildout)	
Land Use Type	**Units**	**Amount**	**ADT**	**Amount**	**ADT**
Single Family Residential	DU	51,300	501,000	92,000	903,000
Multi-Family Residential	DU	25,600	203,000	54,800	423,000
Commercial, Retail, Office & Industrial	MSF	31.8	696,000	81.9	1,539,000
Other	-	-	170,000	-	256,000
Total	-	-	1,570,000	-	3,121,000 (+99%)

DU = Dwelling Unit
MSF = Million Square Feet
ADT = Average Daily Traffic

Source: Santa Clarita Valley Consolidated Traffic Model (SCVCTM) Version 4.1

Future year traffic forecasts have been obtained from the Santa Clarita Valley Consolidated Traffic Model (SCVCTM). The SCVCTM was developed jointly by the County of Los Angeles Department of Public Works and the City of Santa Clarita and is the primary tool used by both agencies for transportation planning in this area. The model has the ability to provide traffic volume forecasts for multiple future year scenarios, including long-range cumulative (buildout) conditions for the Santa Clarita Valley.

In addition to forecasting the theoretical buildout traffic demand, a special version of the SCVCTM has been prepared to reflect the actual flow of traffic volumes south of the I-5/SR-14 confluence, which is constrained by the available (existing and planned) capacity for that heavily traveled section of freeway. The purpose of this constrained flow model is to provide a realistic peak hour volume for the freeway segments north of the I-5/SR-14 confluence by taking into account the geometric constraints that will determine the flow rates south of the interchange.

A summary of 2030 (buildout) traffic volumes derived by the constrained flow model, for peak hour by direction and for ADT, is provided in Table 8. The corresponding peak period volumes for constrained flow conditions are provided in Table 9. An illustration of the peak hour mainline and ramp volumes is provided in Figure 2.

Table 10 summarizes the peak hour and for ADT volumes for the unconstrained condition and Table 11 summarizes the comparable peak period forecasts. An illustration of the peak hour mainline and ramp volumes is provided in Figure 3. As noted above, the unconstrained volumes represent a theoretical demand for the facility, not taking into account the actual capacity available south of the I-5/SR-14 confluence. A comparison of the two sets of forecasts indicates that the total daily volume of traffic south of the I-5/SR-14 confluence is similar for each scenario. Where differences occur is in the peak hours, which are most affected by the constraint. In practice, this reflects an adjustment to travel habits such as driving in the off-peak hours or using transit as an alternative to driving in the peak hour.

For this analysis, no differentiation is made between build and no-build traffic volume forecasts since the I-5 freeway is the only viable option for north-south travel in and out of the Santa Clarita Valley. This is due to the lack of parallel facilities other than The Old Road, which itself has limited capacity for other than local traffic. Also, this approach more accurately demonstrates the true impact to the I-5 corridor for a no-build scenario since it does not presume that freeway traffic will utilize local roadways as a bypass, which can result in understating the need for capacity enhancements.

Table 8: Year 2030 (Santa Clarita Valley Buildout) Peak Hour Traffic Volumes – Constrained Flow Model

I-5 Segment	AM Peak Hour		PM Peak Hour		ADT
	SB	NB	SB	NB	
North of Parker Road	5,200	4,100	6,500	6,800	207,000
Between Parker Road & Hasley Canyon Road	6,700	4,900	7,600	8,200	240,000
Between Hasley Canyon Road & SR-126	7,200	6,500	9,100	8,700	251,000
Between SR-126 & Rye Canyon Road	7,000	6,900	9,200	7,700	234,000
Between Rye Canyon Road & Magic Mountain Parkway	7,200	6,900	10,100	7,700	255,000
Between Magic Mountain Pkwy & Valencia Boulevard	7,300	7,100	9,800	7,900	263,000
Between Valencia Boulevard & McBean Parkway	8,100	7,600	10,000	8,300	268,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	7,800	7,500	9,600	8,400	283,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	7,300	7,000	8,900	8,400	281,000
Between Calgrove Boulevard & SR-14	7,400	6,400	8,800	8,200	290,000
South of SR-14	17,700	9,200	11,500	16,700	617,000

Source: SCVCTM Ver. 4.1 Year 2030 Constrained Flow Scenario with Centennial (12/27/06)

Table 9: Year 2030 (Santa Clarita Valley Buildout) Peak Period Traffic Volumes – Constrained Flow Model

I-5 Segment	AM Peak Period		PM Peak Period		ADT
	SB	NB	SB	NB	
North of Parker Road	15,300	11,400	24,100	26,200	207,000
Between Parker Road & Hasley Canyon Road	19,700	13,600	28,100	31,500	240,000
Between Hasley Canyon Road & SR-126	21,200	18,300	32,500	32,800	251,000
Between SR-126 & Rye Canyon Road	20,600	19,700	31,700	28,500	234,000
Between Rye Canyon Road & Magic Mountain Parkway	21,200	19,700	34,800	28,500	255,000
Between Magic Mountain Pkwy & Valencia Boulevard	21,500	20,300	33,800	29,300	263,000
Between Valencia Boulevard & McBean Parkway	23,800	22,000	35,100	31,300	268,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	22,900	22,100	34,300	32,300	283,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	21,500	20,600	31,800	32,300	281,000
Between Calgrove Boulevard & SR-14	21,800	18,800	31,400	31,500	290,000
South of SR-14	53,100	27,600	44,200	66,800	617,000

AM Peak Period = 6 am – 9 am
PM Peak Period = 3 pm – 7 pm

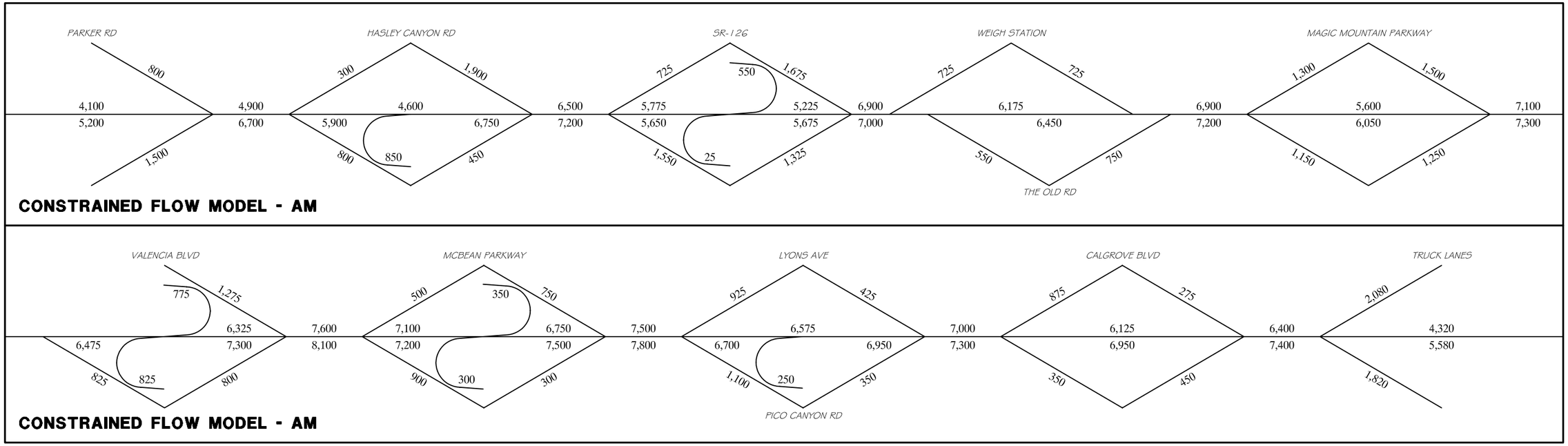


Figure 2

PEAK HOUR VOLUMES
- CONSTRAINED FLOW MODEL

Table 10: Year 2030 (Santa Clarita Valley Buildout) Peak Hour Traffic Volumes – Demand Model

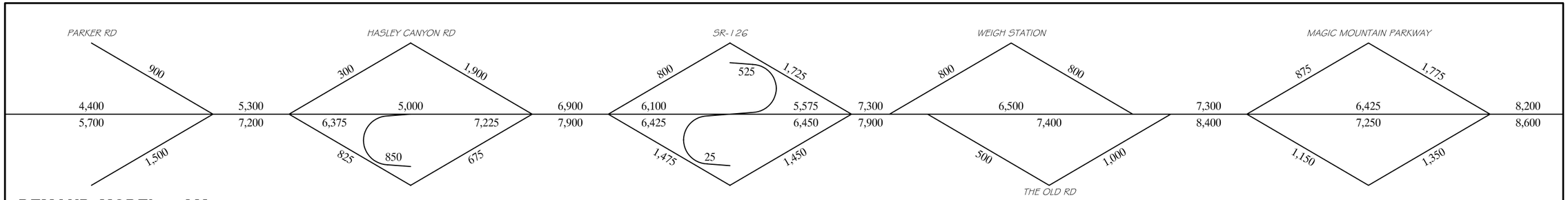
	AM Peak Hour		PM Peak Hour		
I-5 Segment	**SB**	**NB**	**SB**	**NB**	**ADT**
North of Parker Road	5,700	4,400	7,200	7,600	207,000
Between Parker Road & Hasley Canyon Road	7,200	5,300	8,300	9,100	241,000
Between Hasley Canyon Road & SR-126	7,900	6,900	9,800	9,600	254,000
Between SR-126 & Rye Canyon Road	7,900	7,300	10,300	8,900	242,000
Between Rye Canyon Road & Magic Mountain Parkway	8,400	7,300	12,100	8,900	273,000
Between Magic Mountain Pkwy & Valencia Boulevard	8,600	8,200	12,100	9,500	294,000
Between Valencia Boulevard & McBean Parkway	9,600	9,100	13,000	10,300	312,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	9,500	9,500	12,300	10,500	322,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	9,500	9,400	11,900	10,900	324,000
Between Calgrove Boulevard & SR-14	9,600	8,900	11,700	11,000	322,000
South of SR-14	23,000	12,300	15,500	22,300	628,000

Source: SCVCTM Ver. 4.1 Long-Range Cumulative Scenario with Centennial (11/3/06)

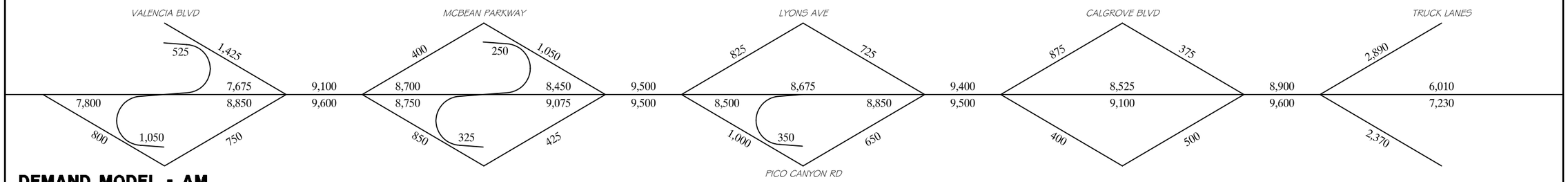
Table 11: Year 2030 (Santa Clarita Valley Buildout) Peak Period Traffic Volumes – Demand Model

	AM Peak Period		PM Peak Period		
I-5 Segment	**SB**	**NB**	**SB**	**NB**	**ADT**
North of Parker Road	15,400	11,600	25,700	27,100	207,000
Between Parker Road & Hasley Canyon Road	19,500	13,900	29,600	32,500	241,000
Between Hasley Canyon Road & SR-126	20,800	18,200	33,800	33,700	254,000
Between SR-126 & Rye Canyon Road	20,300	19,200	34,300	30,700	242,000
Between Rye Canyon Road & Magic Mountain Parkway	21,500	19,200	40,300	30,700	273,000
Between Magic Mountain Pkwy & Valencia Boulevard	22,100	21,600	40,300	32,800	294,000
Between Valencia Boulevard & McBean Parkway	24,900	23,900	44,100	36,100	312,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	25,000	25,000	42,400	37,500	322,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	25,000	24,700	41,000	38,900	324,000
Between Calgrove Boulevard & SR-14	25,300	23,400	40,300	39,300	322,000
South of SR-14	62,200	34,200	55,400	82,600	628,000

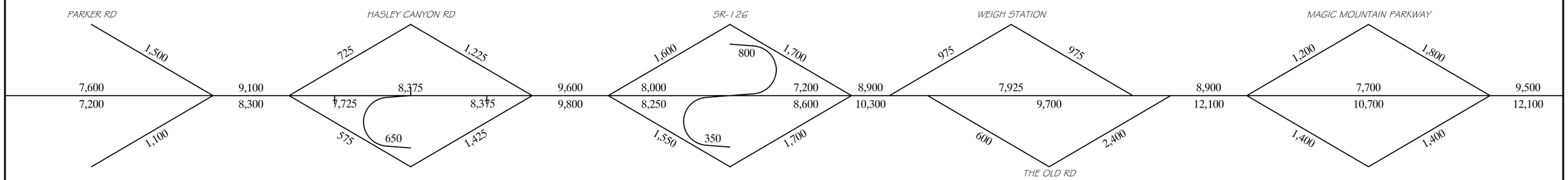
AM Peak Period = 6 am – 9 am
PM Peak Period = 3 pm – 7 pm



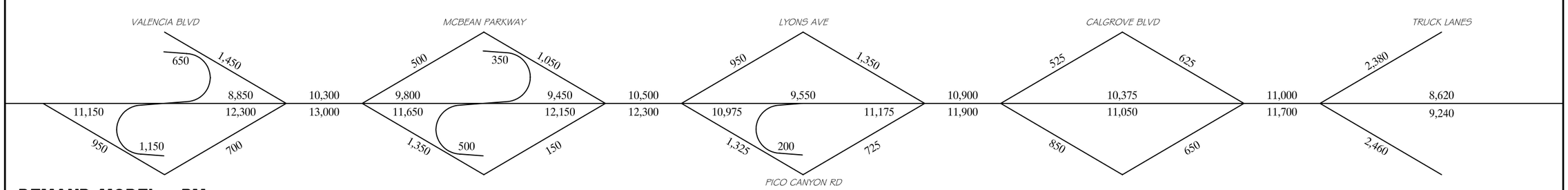
DEMAND MODEL - AM



DEMAND MODEL - AM



DEMAND MODEL - PM



DEMAND MODEL - PM

Figure 3

PEAK HOUR VOLUMES
- DEMAND MODEL

A summary of the HCS operational analysis for 2030 conditions is provided in Table 12 for the no-build scenario and in Table 13 inclusive of the proposed project. Based on this analysis, without the proposed project the I-5 freeway is forecast to operate primarily at LOS E and LOS F during the PM peak hour. During the AM peak hour, LOS is forecast to primarily range between LOS D and F, depending on segment. With the proposed project the maximum forecast LOS is E, which is indicated for three southbound segments during the PM peak hour. The remaining segments are forecast as primarily LOS C or D. HCS worksheets are provided in Appendix D. This analysis is based on allowing use of the HOV lanes for vehicles with occupancies of 2 or more persons. A limitation of a 3 or more persons per vehicle occupancy is discussed in Section 7.0.

A summary of the HCS operational analysis for 2030 unconstrained (i.e., demand) conditions is provided in Table 14 for the no-build scenario and in Table 15 inclusive of the proposed project. Based on this analysis, without the proposed project the I-5 freeway is forecast to operate primarily at LOS F during the PM peak hour. During the AM peak hour, the LOS is forecast to primarily range between LOS E and F in the southbound direction and between LOS D and F in the northbound direction. With the proposed project, LOS F is forecast during the PM peak hour between Rye Canyon Road and the truck bypass route for the southbound direction and between McBean Parkway and Calgrove Boulevard in the northbound direction. LOS F is also forecast for several of the HOV lanes. For the remaining segments during the PM peak hour, the LOS is forecast to range between LOS D and E. During the AM peak hour, the LOS is forecast to primarily range between LOS C and E. HCS worksheets are provided in Appendix D. As noted above, this analysis is based on allowing use of the HOV lanes for vehicles with occupancies of 2 or more persons. A limitation of a 3 or more persons per vehicle occupancy is discussed in Section 7.0.

Table 12: LOS Summary – 2030 No-Build Conditions (Constrained Flow Model)

I-5 Segment	AM Peak Hour			PM Peak Hour		
	Speed	Density	LOS	Speed	Density	LOS
Northbound						
Lake Hughes to Parker	70.0	17.1	B	65.2	30.4	D
Parker to Hasley Canyon	70.0	20.1	C	54.9	42.9	E
Hasley Canyon to SR-126	67.1	27.7	D	<53.3	>45.0	F
SR-126 to Rye Canyon	65.3	30.2	D	60.0	36.7	E
Rye Canyon to Magic Mountain	65.3	30.2	D	60.0	36.7	E
Magic Mountain to Valencia	64.2	31.6	D	58.3	38.8	E
Valencia to McBean	60.8	35.8	E	54.3	43.8	E
McBean to Pico	59.0	37.9	E	<53.3	>45.0	F
Pico to Calgrove	65.0	30.7	D	53.6	44.6	E
Calgrove to Truck Route Bypass	67.7	26.8	D	56.1	41.4	E
Truck Route Bypass to SR-14 Ramp (On)	69.6	22.5	C	56.2	41.3	E
SR-14 Ramp (On) to SR-14 Ramp (Off)	69.8	21.4	C	63.9	32.0	D
Southbound						
Lake Hughes to Parker	69.8	21.7	C	66.6	28.5	D
Parker to Hasley Canyon	66.1	29.1	D	60.5	36.1	E
Hasley Canyon to SR-126	63.6	32.4	D	<53.3	>45.0	F
SR-126 to Rye Canyon	64.8	30.9	D	<53.3	>45.0	F
Rye Canyon to Magic Mountain	63.6	32.4	D	<53.3	>45.0	F
Magic Mountain to Valencia	60.2	36.5	E	<53.3	>45.0	F
Valencia to McBean	<53.3	>45.0	F	<53.3	>45.0	F
McBean to Pico	59.5	37.4	E	<53.3	>45.0	F
Pico to Calgrove	<53.3	>45.0	F	<53.3	>45.0	F
Calgrove to Truck Route Bypass	<53.3	>45.0	F	<53.3	>45.0	F
Truck Route Bypass to SR-14 Ramp (On)	69.8	21.7	C	66.8	28.3	D
SR-14 Ramp (On) to Balboa	66.5	28.6	D	59.3	37.6	E

Table 13: LOS Summary – 2030 Build Conditions (Constrained Flow Model)

	Mixed Flow Lanes						*HOV Lane*				*Truck Lane(s)*			
	AM Peak Hour			**PM Peak Hour**			**AM Peak Hour**		**PM Peak Hour**		**AM Peak Hour**		**PM Peak Hour**	
I-5 Segment	**Speed**	**Density**	**LOS**	**Speed**	**Density**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**
Northbound														
Lake Hughes to Parker	70.0	17.1	B	65.2	30.4	D	--	--	--	--	--	--	--	--
Parker to Hasley Canyon	70.0	16.1	B	66.4	28.7	D	.49	A	.79	C	--	--	--	--
Hasley Canyon to SR-126	69.0	24.3	C	64.0	31.9	D	.61	A	.79	C	--	--	--	--
SR-126 to Rye Canyon	69.3	23.5	C	68.2	25.8	C	.61	A	.77	C	--	--	--	--
Rye Canyon to Magic Mtn	69.3	23.5	C	68.2	25.8	C	.61	A	.77	C	--	--	--	--
Magic Mtn to Valencia	69.3	23.5	C	67.8	26.7	D	.71	C	.79	C	--	--	--	--
Valencia to McBean	68.2	25.9	C	66.2	29.0	D	.71	C	.79	C	--	--	--	--
McBean to Pico	67.7	26.8	D	63.6	32.4	D	.71	C	.75	C	--	--	--	--
Pico to Calgrove	69.2	23.6	C	65.4	30.1	D	.63	B	.75	C	--	--	--	--
Calgrove to Truck Rte Bypass	70.0	18.6	C	69.0	24.2	C	.60	A	.76	C	.38	A	.48	A
Truck Route Bypass to SR-14 Ramp (On)	70.0	16.2	B	68.2	26.0	D	.60	A	.76	C	--	--	--	--
SR-14 Ramp (On) to SR-14 Ramp (Off)	70.0	14.9	B	69.8	21.5	C	.60	A	.76	C	--	--	--	--
Southbound														
Lake Hughes to Parker	69.8	21.7	C	66.6	28.5	D	--	--	--	--	--	--	--	--
Parker to Hasley Canyon	69.7	22.1	C	68.4	25.6	C	.67	B	.76	C	--	--	--	--
Hasley Canyon to SR-126	69.8	21.7	C	63.1	33.0	D	.67	B	.91	E	--	--	--	--
SR-126 to Rye Canyon	69.3	23.4	C	62.6	33.7	D	.67	B	.92	E	--	--	--	--
Rye Canyon to Magic Mtn	69.0	24.3	C	56.2	41.4	E	.67	B	.99	E	--	--	--	--
Magic Mtn to Valencia	67.9	26.4	D	54.8	43.1	E	.67	B	.98	E	--	--	--	--
Valencia to McBean	68.8	24.6	C	64.6	31.2	D	.67	B	.98	E	--	--	--	--
McBean to Pico	67.3	27.4	D	60.4	36.2	E	.67	B	.96	E	--	--	--	--
Pico to Calgrove	69.8	21.3	C	67.7	26.7	D	.68	B	.83	D	.44	A	.53	A
Calgrove to Truck Route Bypass (1 Truck Lane)	69.2	23.7	C	65.7	29.7	D	.67	B	.80	C	.58	A	.69	B
Calgrove to Truck Route Bypass (2 Truck Lanes)	69.9	20.8	C	68.5	25.3	C	.67	B	.80	C	.29	A	.35	A
Truck Route Bypass to SR-14 Ramp (On)	70.0	16.4	B	69.9	20.8	C	.67	B	.80	C	--	--	--	--
SR-14 Ramp (On) to Balboa	69.9	20.3	C	69.1	23.9	C	.67	B	.80	C	--	--	--	--
D/C calculations based on LOS E/F threshold of 2,000 veh/hr (HOV Lanes) and 1,200 veh/hr (Truck Lanes).														

Table 14: No-Build Conditions (Demand Model)

I-5 Segment	AM Peak Hour			PM Peak Hour		
	Speed	Density	LOS	Speed	Density	LOS
Northbound						
Lake Hughes to Parker	70.0	18.3	C	59.6	37.2	E
Parker to Hasley Canyon	69.7	22.0	C	<53.3	>45.0	F
Hasley Canyon to SR-126	65.3	30.2	D	<53.3	>45.0	F
SR-126 to Rye Canyon	63.0	33.2	D	<53.3	>45.0	F
Rye Canyon to Magic Mountain	63.0	33.2	D	<53.3	>45.0	F
Magic Mountain to Valencia	55.7	41.9	E	<53.3	>45.0	F
Valencia to McBean	<53.3	>45.0	F	<53.3	>45.0	F
McBean to Pico	<53.3	>45.0	F	<53.3	>45.0	F
Pico to Calgrove	<53.3	>45.0	F	<53.3	>45.0	F
Calgrove to Truck Route Bypass	<53.3	>45.0	F	<53.3	>45.0	F
Truck Route Bypass to SR-14 Ramp (On)	60.8	35.7	E	<53.3	>45.0	F
SR-14 Ramp (On) to SR-14 Ramp (Off)	65.2	30.4	D	<53.3	>45.0	F
Southbound						
Lake Hughes to Parker	69.1	24.1	C	62.7	33.5	D
Parker to Hasley Canyon	63.2	32.9	D	53.4	44.9	E
Hasley Canyon to SR-126	58.3	38.8	E	<53.3	>45.0	F
SR-126 to Rye Canyon	58.3	38.8	E	<53.3	>45.0	F
Rye Canyon to Magic Mountain	<53.3	>45.0	F	<53.3	>45.0	F
Magic Mountain to Valencia	<53.3	>45.0	F	<53.3	>45.0	F
Valencia to McBean	<53.3	>45.0	F	<53.3	>45.0	F
McBean to Pico	<53.3	>45.0	F	<53.3	>45.0	F
Pico to Calgrove	<53.3	>45.0	F	<53.3	>45.0	F
Calgrove to Truck Route Bypass	<53.3	>45.0	F	<53.3	>45.0	F
Truck Route Bypass to SR-14 Ramp (On)	65.6	29.9	D	<53.3	>45.0	F
SR-14 Ramp (On) to Balboa	<53.3	>45.0	F	<53.3	>45.0	F

Table 15: LOS Summary – 2030 Build Conditions (Demand Model)

	Mixed Flow Lanes						*HOV Lane*				*Truck Lane(s)*			
	AM Peak Hour			**PM Peak Hour**			**AM Peak Hour**		**PM Peak Hour**		**AM Peak Hour**		**PM Peak Hour**	
I-5 Segment	**Speed**	**Density**	**LOS**	**Speed**	**Density**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**
Northbound														
Lake Hughes to Parker	70.0	18.3	C	59.6	37.2	E	--	--	--	--	--	--	--	--
Parker to Hasley Canyon	70.0	17.5	B	62.4	33.9	D	.53	A	.89	D	--	--	--	--
Hasley Canyon to SR-126	69.5	22.7	C	64.1	31.8	D	.69	B	.89	D	--	--	--	--
SR-126 to Rye Canyon	68.8	24.6	C	64.1	31.8	D	.69	B	.89	D	--	--	--	--
Rye Canyon to Magic Mtn	68.8	24.6	C	64.1	31.8	D	.69	B	.89	D	--	--	--	--
Magic Mtn to Valencia	67.0	27.9	D	61.1	35.4	E	.82	D	.95	E	--	--	--	--
Valencia to McBean	62.1	34.2	D	53.6	44.6	E	.82	D	.95	E	--	--	--	--
McBean to Pico	55.2	42.6	E	<53.3	>45.0	F	.81	D	1.00	E	--	--	--	--
Pico to Calgrove	59.6	37.3	E	<53.3	>45.0	F	.81	C	1.00	E	--	--	--	--
Calgrove to Truck Rte Bypass	67.7	26.8	D	58.9	38.1	E	.83	D	1.02	F	.53	A	.65	B
Truck Route Bypass to SR-14 Ramp (On)	69.5	22.7	C	54.1	44.0	E	.83	D	1.02	F	--	--	--	--
SR-14 Ramp (On) to SR-14 Ramp (Off)	70.0	19.8	C	64.7	31.0	D	.83	D	1.02	F	--	--	--	--
Southbound														
Lake Hughes to Parker	69.1	24.1	C	62.7	33.5	D	--	--	--	--	--	--	--	--
Parker to Hasley Canyon	69.1	24.1	C	66.3	29.0	D	.72	C	.83	D	--	--	--	--
Hasley Canyon to SR-126	67.3	27.5	D	58.8	38.2	E	.72	C	.98	E	--	--	--	--
SR-126 to Rye Canyon	67.3	27.5	D	58.8	38.2	E	.72	C	1.03	F	--	--	--	--
Rye Canyon to Magic Mtn	64.9	30.8	D	<53.3	>45.0	F	.72	C	1.03	F	--	--	--	--
Magic Mtn to Valencia	63.8	32.2	D	<53.3	>45.0	F	.86	D	1.03	F	--	--	--	--
Valencia to McBean	65.5	30.0	D	<53.3	>45.0	F	.86	D	1.06	F	--	--	--	--
McBean to Pico	59.6	37.2	E	<53.3	>45.0	F	.86	D	1.06	F	--	--	--	--
Pico to Calgrove	66.0	29.3	D	<53.3	>45.0	F	.88	D	1.09	F	.57	A	.72	C
Calgrove to Truck Route Bypass (1 Truck Lane)	61.9	34.5	D	<53.3	>45.0	F	.86	D	1.06	F	.75	C	.92	E
Calgrove to Truck Route Bypass (2 Truck Lanes)	66.6	28.4	D	57.0	40.4	E	.86	D	1.06	F	.38	A	.46	A
Truck Route Bypass to SR-14 Ramp (On)	69.8	21.4	C	66.1	29.2	D	.86	D	1.06	F	--	--	--	--
SR-14 Ramp (On) to Balboa	67.4	27.3	D	60.2	36.5	E	.86	D	1.06	F	--	--	--	--
D/C calculations based on LOS E/F threshold of 2,000 veh/hr (HOV Lanes) and 1,200 veh/hr (Truck Lanes).														

4.0 EARLY IMPLEMENTATION PROJECTS ANALYSIS – 2010 CONDITIONS

Mainline freeway traffic volume forecasts for year 2010 conditions are summarized in Table 16 for the peak hour and ADT. Table 17 summaries the comparable peak period volumes. These forecasts are utilized to evaluate opening day conditions for the EIPs, which are expected to be completed around 2009 or 2010.

Truck Climbing Lane

A truck climbing lane is proposed to be added to the existing four lane southbound facility. Two segments have been analyzed: 1) between Pico Canyon Road/Lyons Avenue and Calgrove Boulevard and 2) between Calgrove Boulevard and SR-14.

A detailed evaluation of the EIP truck climbing lane was prepared in June 2007 by DMJM Harris (see Appendix C.) As with the project analysis discussed in previous sections, an HCM LOS analysis was used to compare the impacts of the study scenarios. The approach of the analysis was to assume that one lane was not usable by passenger cars because of slow moving trucks (see discussion in Section 2.0). The analysis was done by subtracting 80% of the trucks from the volume and subtracting one lane, which results in a three lane freeway segment analysis with two percent trucks. As noted previously, the analysis based on this methodology has been determined to be the most representative of the observed existing conditions.

The results of the analysis of adding the truck lane to southbound I-5 is provided in Table 18. The addition of a truck lane is forecast to improve the peak hour operating conditions in 2010 from LOS E and F to LOS C and D. The single truck lane is expected to operate at an acceptable LOS based on an anticipated truck flow rate of approximately 410 trucks per hour.

Table 16: Year 2010 – Early Implementation Project Opening Day Peak Hour Forecasts

I-5 Segment	AM Peak Hour		PM Peak Hour		ADT
	SB	NB	SB	NB	
North of Parker Road	2,400	1,900	3,000	3,400	100,000
Between Parker Road & Hasley Canyon Road	3,400	2,300	3,500	4,400	122,000
Between Hasley Canyon Road & SR-126	4,200	3,400	4,600	5,000	138,000
Between SR-126 & Rye Canyon Road	4,100	4,400	5,400	4,900	146,000
Between Rye Canyon Road & Magic Mountain Parkway	4,600	4,400	6,600	4,900	160,000
Between Magic Mountain Pkwy & Valencia Boulevard	4,800	5,300	6,500	5,700	176,000
Between Valencia Boulevard & McBean Parkway	5,600	6,100	7,100	6,400	194,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	5,800	6,200	7,100	6,800	204,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	6,400	6,000	6,800	7,100	206,000
Between Calgrove Boulevard & SR-14	6,600	5,800	6,800	7,100	214,000
South of SR-14	13,800	7,700	9,500	13,900	394,000

Source: SCVCTM Ver. 4.1

Table 17: Year 2010 – Early Implementation Project Opening Day Peak Period Forecasts

I-5 Segment	AM Peak Period		PM Peak Period		ADT
	SB	NB	SB	NB	
North of Parker Road	6,300	5,000	10,300	11,700	100,000
Between Parker Road & Hasley Canyon Road	8,900	6,100	12,100	15,200	122,000
Between Hasley Canyon Road & SR-126	11,100	8,900	15,900	17,200	138,000
Between SR-126 & Rye Canyon Road	10,800	11,600	18,600	16,900	146,000
Between Rye Canyon Road & Magic Mountain Parkway	12,100	11,600	22,800	16,900	160,000
Between Magic Mountain Pkwy & Valencia Boulevard	12,600	13,900	22,400	19,700	176,000
Between Valencia Boulevard & McBean Parkway	14,700	16,100	24,500	22,100	194,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	15,300	16,300	24,500	23,400	204,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	16,800	15,800	23,400	24,500	206,000
Between Calgrove Boulevard & SR-14	17,400	15,300	23,400	24,500	214,000
South of SR-14	36,300	20,300	32,800	47,900	394,000

AM Peak Period = 6 am – 9 am
PM Peak Period = 3 pm – 7 pm

Table 18: EIP Southbound Truck Lane Addition LOS Analysis Results

Freeway Section		SB Between Lyons Ave & Calgrove Blvd		SB Between Calgrove Blvd & SR-14	
Peak Hour		**AM**	**PM**	**AM**	**PM**
2006 Existing	LOS	E	E	F	F
	Density (pc/mi/ln)	35.5	38.3	>45.0	>45.0
	Ave pc Speed (mph)	61.1	58.6	<53.3	<53.3
2010 No Improvements	LOS	E	E	F	F
	Density (pc/mi/ln)	36.4	43.3	>45.0	>45.0
	Ave pc Speed (mph)	60.3	54.6	<53.3	<53.3
2010 With Truck Lane	LOS	C	D	D	D
	Density (pc/mi/ln)	23.8	26.1	27.5	29.3
	Ave pc Speed (mph)	69.2	68.1	67.3	66.0

HOV Lane Extension

An extension of the northbound HOV lane is proposed in order to continue the HOV lane currently under construction north to the summit, which is just after the merge point of the existing truck bypass route. Two segments have been analyzed: 1) between the off-ramp to SR-14 northbound and the on-ramp from SR-14 southbound and 2) between on-ramp from SR-14 southbound and the truck bypass route on-ramp.

A detailed evaluation of the EIP HOV lane extension was prepared in June 2007 by DMJM Harris (see Appendix C.) As with the other analyses, an HCM LOS analysis was used to compare the effect of extending the HOV lane. The approach of the analysis was to evaluate the build scenario as a four lane freeway even though the added lane was a HOV lane. Based on the number of vehicles eligible to use the HOV lane (see discussion in Section 2.0), a relatively even lane utilization is anticipated. Also, since this represents the final segment of the northbound HOV lane, HOVs will not be separated from the mixed flow lanes. As such, the segment will operate more like a four lane freeway segment than a three lane freeway with a separate HOV lane.

Table 19 provides the results of the analysis of extending the northbound HOV lane to the summit just past the truck route merge point. The extension of the HOV lane is forecast to improve the peak hour operating conditions of this segment in 2010 from LOS C to LOS B in the AM peak hour and from LOS D to LOS C in the PM peak hour.

Table 19: EIP Northbound HOV Lane Extension LOS Analysis Results

Freeway Section		NB Between Off-Ramp to NB SR-14 & On-Ramp From SR-14 SB		NB Between On-Ramp From SR-14 SB & Truck Route On-Ramp	
Peak Hour		**AM**	**PM**	**AM**	**PM**
2006 Existing	LOS	B	C	C	D
	Density (pc/mi/ln)	17.8	25.4	19.5	30.2
	Ave pc Speed (mph)	70.0	68.5	70.0	65.3
2010 No Improvements	LOS	C	C	C	D
	Density (pc/mi/ln)	18.6	25.9	20.4	30.9
	Ave pc Speed (mph)	70.0	68.2	69.9	64.8
2010 With HOV Lane Extension	LOS	B	C	B	C
	Density (pc/mi/ln)	13.9	18.9	15.3	21.5
	Ave pc Speed (mph)	70.0	70.0	70.0	69.8

5.0 FULL PROJECT OPENING DAY ANALYSIS – 2015 CONDITIONS

Table 20 summarizes the peak hour and ADT traffic volume forecasts for year 2015 conditions and Table 21 summarizes the comparable peak period volumes. These forecasts are utilized to evaluate the full project, which is expected to be completed around 2014 or 2015.

A summary of the HCS operational analysis for 2015 conditions is provided in Table 22 for the no-build scenario and in Table 23 inclusive of the proposed project. Based on this analysis, without the proposed project the I-5 freeway is forecast to operate at LOS F for two southbound segments during the PM peak hour. The remaining segments are forecast to operate primarily between LOS D and E during the PM peak hour. During the AM peak hour, LOS is forecast to primarily range between LOS C and D, with the exception of the southbound segments between Pico Canyon Road/Lyons Avenue and the start of the truck bypass route at SR-14, which are forecast to operate at LOS E. With the proposed project the maximum forecast LOS is D, which is indicated for three southbound segments during the PM peak hour. The remaining segments are forecast as primarily LOS B or C. HCS worksheets are provided in Appendix D.

Table 20: Year 2015 – Full Project Opening Day Peak Hour Forecasts

I-5 Segment	AM Peak Hour		PM Peak Hour		ADT
	SB	NB	SB	NB	
North of Parker Road	3,300	2,700	4,100	4,700	137,000
Between Parker Road & Hasley Canyon Road	4,700	3,100	4,700	6,100	163,000
Between Hasley Canyon Road & SR-126	5,300	4,800	6,400	6,500	179,000
Between SR-126 & Rye Canyon Road	4,900	5,600	6,800	5,800	171,000
Between Rye Canyon Road & Magic Mountain Parkway	5,100	5,600	8,100	5,800	191,000
Between Magic Mountain Pkwy & Valencia Boulevard	5,400	6,200	7,800	6,200	203,000
Between Valencia Boulevard & McBean Parkway	6,100	7,000	8,200	6,800	216,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	5,900	6,900	8,000	7,000	226,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	6,600	6,500	7,400	7,300	220,000
Between Calgrove Boulevard & SR-14	6,700	6,100	7,400	7,200	229,000
South of SR-14	14,500	8,200	9,900	14,100	471,000

Source: SCVCTM Ver. 4.1

Table 21: Year 2015 – Full Project Opening Day Peak Period Forecasts

I-5 Segment	AM Peak Period		PM Peak Period		ADT
	SB	NB	SB	NB	
North of Parker Road	8,700	7,100	14,100	16,200	137,000
Between Parker Road & Hasley Canyon Road	12,400	8,200	16,200	21,000	163,000
Between Hasley Canyon Road & SR-126	13,900	12,600	22,100	22,400	179,000
Between SR-126 & Rye Canyon Road	12,900	14,700	23,400	20,000	171,000
Between Rye Canyon Road & Magic Mountain Parkway	13,400	14,700	27,900	20,000	191,000
Between Magic Mountain Pkwy & Valencia Boulevard	14,200	16,300	26,900	21,400	203,000
Between Valencia Boulevard & McBean Parkway	16,100	18,400	28,300	23,400	216,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	15,500	18,200	27,600	24,100	226,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	17,400	17,100	25,500	25,200	220,000
Between Calgrove Boulevard & SR-14	17,600	16,100	25,500	24,800	229,000
South of SR-14	38,200	21,600	34,100	48,600	471,000

AM Peak Period = 6 am – 9 am
PM Peak Period = 3 pm – 7 pm

Table 22: LOS Summary – 2015 No-Build Conditions

I-5 Segment	AM Peak Hour			PM Peak Hour		
	Speed	Density	LOS	Speed	Density	LOS
Northbound						
Lake Hughes to Parker	70.0	11.2	B	70.0	19.6	C
Parker to Hasley Canyon	70.0	12.8	B	68.3	25.8	C
Hasley Canyon to SR-126	70.0	19.7	C	67.0	27.9	D
SR-126 to Rye Canyon	69.4	23.2	C	69.0	24.2	C
Rye Canyon to Magic Mountain	69.4	23.2	C	69.0	24.2	C
Magic Mountain to Valencia	68.0	26.2	D	68.0	26.2	D
Valencia to McBean	64.8	30.9	D	65.8	29.6	D
McBean to Pico	63.6	32.3	D	63.0	33.2	D
Pico to Calgrove	67.2	27.5	D	63.2	32.9	D
Calgrove to Truck Route Bypass	68.6	25.2	C	64.0	31.9	D
Truck Route Bypass to SR-14 Ramp (On)	69.8	21.3	C	69.7	21.9	C
SR-14 Ramp (On) to SR-14 Ramp (Off)	69.9	20.4	C	67.9	26.5	D
Southbound						
Lake Hughes to Parker	70.0	13.7	B	70.0	17.1	B
Parker to Hasley Canyon	70.0	19.4	C	70.0	19.4	C
Hasley Canyon to SR-126	69.7	21.9	C	67.4	27.3	D
SR-126 to Rye Canyon	70.0	20.1	C	65.7	29.8	D
Rye Canyon to Magic Mountain	69.9	21.0	C	56.0	41.6	E
Magic Mountain to Valencia	69.2	23.7	C	54.5	43.5	E
Valencia to McBean	66.4	28.8	D	<53.3	>45.0	F
McBean to Pico	68.9	24.4	C	57.7	39.5	E
Pico to Calgrove	59.6	37.2	E	<53.3	>45.0	F
Calgrove to Truck Route Bypass	<53.3	>45.0	F	<53.3	>45.0	F
Truck Route Bypass to SR-14 Ramp (On)	70.0	19.6	C	62.4	33.8	D
SR-14 Ramp (On) to Balboa	68.6	25.1	C	70.0	20.1	C

Table 23: LOS Summary – 2015 Build Conditions

	Mixed Flow Lanes						*HOV Lane*				*Truck Lane(s)*			
	AM Peak Hour			**PM Peak Hour**			**AM Peak Hour**		**PM Peak Hour**		**AM Peak Hour**		**PM Peak Hour**	
I-5 Segment	**Speed**	**Density**	**LOS**	**Speed**	**Density**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**	**D/C**	**LOS**
Northbound														
Lake Hughes to Parker	70.0	11.2	B	70.0	19.6	C	--	--	--	--	--	--	--	--
Parker to Hasley Canyon	70.0	10.2	A	69.9	20.4	C	.31	A	.58	A	--	--	--	--
Hasley Canyon to SR-126	70.0	15.8	B	69.7	22.0	C	.48	A	.58	A	--	--	--	--
SR-126 to Rye Canyon	70.0	19.1	C	70.0	19.1	C	.48	A	.58	A	--	--	--	--
Rye Canyon to Magic Mtn	70.0	19.1	C	70.0	19.1	C	.48	A	.58	A	--	--	--	--
Magic Mtn to Valencia	69.9	20.4	C	69.9	20.4	C	.62	B	.62	B	--	--	--	--
Valencia to McBean	69.2	23.8	C	69.6	22.5	C	.62	B	.67	B	--	--	--	--
McBean to Pico	68.9	24.5	C	68.9	24.5	C	.62	B	.67	B	--	--	--	--
Pico to Calgrove	69.7	21.9	C	68.8	24.7	C	.57	A	.67	B	--	--	--	--
Calgrove to Truck Rte Bypass	70.0	17.8	B	69.9	21.0	C	.57	A	.67	B	.36	A	.43	A
Truck Route Bypass to SR-14 Ramp (On)	70.0	15.5	B	70.0	16.7	B	.57	A	.67	B	--	--	--	--
SR-14 Ramp (On) to SR-14 Ramp (Off)	70.0	14.3	B	70.0	18.8	C	.57	A	.67	B	--	--	--	--
Southbound														
Lake Hughes to Parker	70.0	13.7	B	70.0	17.1	B	--	--	--	--	--	--	--	--
Parker to Hasley Canyon	70.0	15.5	B	70.0	15.5	B	.47	A	.47	A	--	--	--	--
Hasley Canyon to SR-126	70.0	17.9	B	69.9	21.1	C	.47	A	.64	B	--	--	--	--
SR-126 to Rye Canyon	70.0	16.3	B	70.0	22.8	C	.47	A	.64	B	--	--	--	--
Rye Canyon to Magic Mtn	70.0	17.1	B	65.6	29.9	D	.47	A	.64	B	--	--	--	--
Magic Mtn to Valencia	70.0	18.8	C	65.5	30.0	D	.54	A	.67	B	--	--	--	--
Valencia to McBean	70.0	17.6	B	68.7	25.0	C	.59	A	.67	B	--	--	--	--
McBean to Pico	70.0	19.2	C	66.6	28.5	D	.59	A	.67	B	--	--	--	--
Pico to Calgrove	70.0	19.2	C	69.8	21.7	C	.61	A	.67	B	.40	A	.44	A
Calgrove to Truck Route Bypass (1 Truck Lane)	69.8	21.3	C	69.2	23.7	C	.61	A	.67	B	.53	A	.58	A
Calgrove to Truck Route Bypass (2 Truck Lanes)	70.0	18.8	C	69.9	20.8	C	.61	A	.67	B	.26	A	.29	A
Truck Route Bypass to SR-14 Ramp (On)	70.0	14.9	B	69.3	23.5	C	.61	A	.67	B	--	--	--	--
SR-14 Ramp (On) to Balboa	70.0	18.3	C	70.0	14.9	B	.61	A	.67	B	--	--	--	--
D/C calculations based on LOS E/F threshold of 2,000 veh/hr (HOV Lanes) and 1,200 veh/hr (Truck Lanes).														

6.0 ACCIDENT RATES

A summary of accident rates for the project area is provided in Table 24 with a comparison to the statewide average. This data, which is for the twelve month period of April 2005 through March 2006, indicates that the study area has a total accident rate lower than the statewide average but a higher rate of fatal accidents than the statewide average.

Table 24: Accident Rate Summary - April 2005 through March 2006

			Segment Accident Rates			Statewide Accident Rates		
PostMile	**Name**	**MVM**	**Fatal Accidents**	**Fatal + Injury**	**Total Accidents**	**Fatal Accidents**	**Fatal + Injury**	**Total Accidents**
Northbound								
R45.500 - R59.299	Jct. Rte 14 to Lake Hughes Rd	381.05	.011	.150	.500	.005	.290	.890
Southbound								
R45.500 - R59.299	Jct. Rte 14 to Lake Hughes Rd	381.05	.008	.230	.660	.005	.290	.890

7.0 3+ OCCUPANCY HOV LANE SCENARIO

The operational analyses discussed in previous sections are based on allowing use of the HOV lanes for vehicles with occupancies of 2 or more persons. A limitation of a 3 or more persons per vehicle occupancy would reduce the amount of vehicles eligible to use the HOV lanes and would result in improved levels of service for the HOV lanes, but reduced levels of service for the mixed flow lanes.

The vehicle occupancy survey presented in Section 2.0 shows how 27 percent of existing vehicles are eligible to use a 2+ persons per vehicle HOV lane and that just 6 percent of existing vehicles are eligible to use a 3+ persons per vehicle HOV lane. With a 2+ persons per vehicle configuration, the forecast traffic volumes for 2030 conditions indicate that during the critical peak hour, LOS E conditions would occur for both the mixed flow lanes and the HOV lanes. With a 3+ persons per vehicle configuration, the volume of eligible vehicles reduces to approximately 30 percent of the HOV lane capacity (i.e., LOS A conditions), resulting in improved HOV lane levels of service. However, this also results in more vehicles using the mixed flow lanes. With these additional vehicles the volumes in the mixed flow lanes would exceed capacity and LOS F conditions in the mixed flow lanes would result.

8.0 TWO SOUTHBOUND TRUCK LANES SCENARIO

Consideration has been given to constructing two truck lanes in the uphill portion of southbound I-5 between Calgrove Boulevard and SR-14. The LOS Summary Tables presented in Section 3.0 present the results of both a single truck lane analysis and this two truck lane analysis. The analysis indicates that providing two truck lanes improves the LOS of the mixed flow lanes by one level of service (from D to C for constrained flow conditions and from F to E for demand conditions), and improves the LOS of the truck lanes by one level of service (from B to A) for constrained flow conditions and by four levels of service (from E to A) for demand conditions.

A single truck lane in the uphill grade section is only able to accommodate the slowest trucks since the faster (e.g., unloaded) trucks will use the outside mixed flow lane to pass the slower trucks. Observed conditions indicate that due to the grade the faster trucks travel at a speed slower than the free-flow speed of passenger vehicles, thus reducing the average speeds in the mixed flow lanes. Providing two truck lanes would allow the faster trucks to pass the slower trucks without impacting the adjacent mixed flow lanes and improved levels of service for both the trucks and the vehicles in the mixed flow lanes will result.

9.0 SPECIAL ISSUES

9.1 HOV LANE CONFIGURATION

The HOV component of the project is anticipated to consist of buffer-separated HOV facilities; however the geometric design alternatives do not preclude the implementation of continuous ingress/egress or High Occupancy Toll (HOT) lanes. The location and number of ingress/egress points will be determined at a later stage of design and if a buffer-separated facility is implemented, a minimum ingress/egress length of 1,300 feet will be required.

Barrier-separated HOV facilities are not being proposed and, as such, a separate HOV weave lane is not mandatory. For buffer-separated facilities, an HOV weave lane is optional but would require additional lateral space in order to be implemented.

9.2 DIRECT HOV CONNECTOR – NORTHBOUND I-5 TO WESTBOUND SR-126

As noted in previous sections, the proposed HOV lanes extend north of the existing SR-126 interchange. The need for a direct connector between northbound I-5 and westbound SR-126 has been evaluated based on the anticipated volume of HOVs making this movement.

Traffic forecasts from the SCVCTM indicate the northbound I-5 to westbound SR-126 movement will remain relatively consistent over time with a peak volume of approximately 1,000 vehicles per hour (vph). This movement is not projected to increase due largely to the significant amount of new roadway construction (e.g., Magic Mountain Parkway, Valencia Boulevard, and Commerce Center Drive) along with the new interchange at Hasley Canyon Road (just north of the SR-126 interchange) that will provide access to the western portion of the Santa Clarita Valley.

Based on the average vehicle occupancies noted previously in Table 3, which indicate approximately 27% of the vehicles in this corridor being eligible to use an HOV lane, the demand for a direct connector is a peak of approximately 270 vph. The High Occupancy Vehicle Guidelines (2003 Edition) make note of a 500 vph threshold for providing direct HOV connectors and, as such, there does not appear to be a sufficient demand for a direct connector at this location.

9.3 AUXILIARY LANES AS AN EIP

Full auxiliary lanes are proposed between the following interchanges: 1) northbound direction between Valencia Boulevard and Magic Mountain Parkway, 2) southbound direction between Valencia Boulevard and McBean Parkway, and 3) northbound direction between Calgrove Boulevard and Pico Canyon Road/Lyons Avenue. These auxiliary lanes would provide benefit as stand alone projects and could potentially be implemented prior to the construction of the full project if funding is limited.

APPENDIX A

I-5 FREEWAY – 2006 COUNT SUMMARY

I-5 Freeway - 2006 Count Summary

I-5 SOUTHBOUND						I-5 NORTHBOUND						
	COUNT			%ADT			COUNT			%ADT		TOTAL
LOCATION	AM Pk Hr	PM Pk Hr	SB ADT	AM	PM	LOCATION	AM Pk Hr	PM Pk Hr	NB ADT	AM	PM	ADT
S/B MAINLINE	**1,330**	**1,970**	**32,490**	**4%**	**6%**	**N/B MAINLINE**	**1,210**	**2,020**	**32,300**	**4%**	**6%**	**64,790**
Lake Hughes SB OFF	160	210	4,800	3%	4%	Lake Hughes NB ON	230	350	7,310	3%	5%	
Lake Hughes SB ON	430	280	6,500	7%	4%	Lake Hughes NB OFF	210	580	6,090	3%	10%	
S/B MAINLINE	**1,600**	**2,040**	**34,190**	**5%**	**6%**	**N/B MAINLINE**	**1,190**	**2,250**	**31,080**	**4%**	**7%**	**65,270**
Parker SB ON	610	380	7,200	8%	5%	Parker NB OFF	380	540	10,960	3%	5%	
S/B MAINLINE	**2,210**	**2,420**	**41,390**	**5%**	**6%**	**N/B MAINLINE**	**1,570**	**2,790**	**42,040**	**4%**	**7%**	**83,430**
Hasley Canyon SB OFF	110	100	1,800	6%	6%	Hasley Canyon NB ON	80	200	2,130	4%	9%	
Hasley Canyon SB ON	1,010	690	9,670	10%	7%	Hasley Canyon NB OFF	680	1,030	10,560	6%	10%	
S/B MAINLINE	**3,110**	**3,010**	**49,260**	**6%**	**6%**	**N/B MAINLINE**	**2,170**	**3,620**	**50,470**	**4%**	**7%**	**99,730**
SR-126 SB OFF	350	270	4,000	9%	7%	SR-126 NB DIRECT ON	150	370	3,540	4%	10%	
SR-126 SB DIRECT ON	650	1,220	13,600	5%	9%	SR-126 NB LOOP ON	80	210	3,860	2%	5%	
SR-126 SB LOOP ON	10	190	2,000	1%	10%	SR-126 NB OFF	1,240	620	12,690	10%	5%	
S/B MAINLINE	**3,420**	**4,150**	**60,860**	**6%**	**7%**	**N/B MAINLINE**	**3,340**	**4,080**	**63,480**	**5%**	**6%**	**124,340**
Old Road/Rye Cyn SB OFF	280	170	4,100	7%	4%							
Old Road/Rye Cyn SB ON	1,060	1,370	13,400	8%	10%							
S/B MAINLINE	**4,200**	**5,350**	**70,160**	**6%**	**8%**	**N/B MAINLINE**	**3,340**	**4,080**	**63,480**	**5%**	**6%**	**133,640**
Magic Mountain SB OFF	350	430	5,500	6%	8%	Magic Mountain NB ON	310	500	8,020	4%	6%	
Magic Mountain SB ON	640	680	11,900	5%	6%	Magic Mountain NB OFF	1,460	1,690	24,460	6%	7%	
S/B MAINLINE	**4,490**	**5,600**	**76,560**	**6%**	**7%**	**N/B MAINLINE**	**4,490**	**5,270**	**79,920**	**6%**	**7%**	**156,480**
Valencia SB OFF	450	300	4,320	10%	7%	Valencia NB LOOP ON	250	250	2,840	9%	9%	
Valencia SB DIRECT ON	430	120	4,100	10%	3%							
Valencia SB LOOP ON	840	1,000	10,760	8%	9%	Valencia NB OFF	1,190	1,030	14,820	8%	7%	
S/B MAINLINE	**5,310**	**6,420**	**87,100**	**6%**	**7%**	**N/B MAINLINE**	**5,430**	**6,050**	**91,900**	**6%**	**7%**	**179,000**
Stevenson Ranch SB OFF	190	520	3,600	5%	14%	McBean NB DIRECT ON	100	130	1,470	7%	9%	
Stevenson Ranch SB DIRECT (	390	90	3,720	10%	2%	McBean NB LOOP ON	120	130	2,280	5%	6%	
Stevenson Ranch SB LOOP ON	220	460	6,200	4%	7%	McBean NB OFF	350	820	7,810	4%	10%	
S/B MAINLINE	**5,730**	**6,450**	**93,420**	**6%**	**7%**	**N/B MAINLINE**	**5,560**	**6,610**	**95,960**	**6%**	**7%**	**189,380**
Pico/Lyons SB OFF	480	580	7,800	6%	7%	Lyons NB ON	500	690	9,030	6%	8%	
Pico/Lyons SB LOOP ON	450	270	4,650	10%	6%							
Pico/Lyons SB DIRCT ON	620	320	7,300	8%	4%	Lyons NB OFF	560	1,100	14,920	4%	7%	
S/B MAINLINE	**6,320**	**6,460**	**97,570**	**6%**	**7%**	**N/B MAINLINE**	**5,620**	**7,020**	**101,850**	**6%**	**7%**	**199,420**
Calgrove SB OFF	260	240	2,550	10%	9%	Calgrove NB ON	130	400	3,840	3%	10%	
Calgrove SB ON	550	190	5,330	10%	4%	Calgrove NB OFF	110	350	3,350	3%	10%	
S/B MAINLINE	**6,610**	**6,410**	**100,350**	**7%**	**6%**	**N/B MAINLINE**	**5,600**	**6,970**	**101,360**	**6%**	**7%**	**201,710**
Total I-5 SB OFF (SCV)	*2,630*	*2,820*	*38,470*	7%	7%	***Total I-5 NB ON (SCV)***	*1,950*	*3,230*	*44,320*	4%	7%	
Total I-5 SB ON (SCV)	*7,910*	*7,260*	*106,330*	7%	7%	***Total I-5 NB OFF (SCV)***	*6,180*	*7,760*	*105,660*	6%	7%	
I-5 SB to SR-14 NB (OFF)	590	340	6,210	10%	5%	SR-14 SB to I-5 NB	330	650	6,350	5%	10%	
SR-14 SB to I-5 SB (ON)	6,990	3,420	67,200	10%	5%	I-5 NB to SR-14 NB	2,380	7,080	68,680	3%	10%	
S/B TOTAL	**13,270**	**9,180**	**161,200**	8%	6%	**N/B TOTAL**	**7,390**	**13,710**	**163,830**	5%	8%	**325,030**
SB - Truck Route	1,820	1,560	26,000	7%	6%	NB - Truck Route	1,560	1,820	26,000	6%	7%	52,000
SB - Mixed Flow Mainline	11,450	7,620	135,200	8%	6%	NB - Mixed Flow Mainline	5,830	11,890	137,830	4%	9%	273,030

APPENDIX B

PEAK HOUR VOLUMES BY VEHICLE TYPE AND OCCUPANCY

Table B-1: Peak Hour Traffic Volumes by Vehicle Type and Occupancy – Year 2010

	Southbound				Northbound			
I-5 Segment	**Trucks**	**SOVs**	**HOVs**	**Total**	**Trucks**	**SOVs**	**HOVs**	**Total**
AM Peak Hour								
North of Parker Road	440	1,430	530	2,400	350	1,130	420	1,900
Between Parker Road & Hasley Canyon Road	510	2,110	780	3,400	350	1,420	530	2,300
Between Hasley Canyon Road & SR-126	550	2,660	990	4,200	440	2,160	800	3,400
Between SR-126 & Rye Canyon Road	530	2,610	960	4,100	570	2,800	1,030	4,400
Between Rye Canyon Road & Magic Mountain Parkway	620	2,910	1,070	4,600	590	2,780	1,030	4,400
Between Magic Mountain Pkwy & Valencia Boulevard	580	3,080	1,140	4,800	640	3,400	1,260	5,300
Between Valencia Boulevard & McBean Parkway	590	3,660	1,350	5,600	640	3,990	1,470	6,100
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	590	3,800	1,410	5,800	630	4,070	1,500	6,200
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	610	4,230	1,560	6,400	570	3,960	1,470	6,000
Between Calgrove Boulevard & SR-14	620	4,370	1,610	6,600	550	3,830	1,420	5,800
South of SR-14	1,190	9,210	3,400	13,800	660	5,140	1,900	7,700
PM Peak Hour								
North of Parker Road	560	1,780	660	3,000	630	2,020	750	3,400
Between Parker Road & Hasley Canyon Road	530	2,170	800	3,500	660	2,730	1,010	4,400
Between Hasley Canyon Road & SR-126	600	2,920	1,080	4,600	650	3,180	1,170	5,000
Between SR-126 & Rye Canyon Road	700	3,430	1,270	5,400	640	3,110	1,150	4,900
Between Rye Canyon Road & Magic Mountain Parkway	890	4,170	1,540	6,600	660	3,100	1,140	4,900
Between Magic Mountain Pkwy & Valencia Boulevard	780	4,180	1,540	6,500	680	3,660	1,360	5,700
Between Valencia Boulevard & McBean Parkway	750	4,640	1,710	7,100	670	4,180	1,550	6,400
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	720	4,660	1,720	7,100	690	4,460	1,650	6,800
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	650	4,490	1,660	6,800	670	4,690	1,740	7,100
Between Calgrove Boulevard & SR-14	640	4,500	1,660	6,800	670	4,690	1,740	7,100
South of SR-14	820	6,340	2,340	9,500	1,200	9,270	3,430	13,900

SOV = Single Occupant Vehicle
HOV = High Occupancy Vehicle (2+ Persons/Vehicle) and is HOV lane eligible

Table B-2: Peak Hour Traffic Volumes by Vehicle Type and Occupancy – Year 2015

	Southbound				Northbound			
I-5 Segment	**Trucks**	**SOVs**	**HOVs**	**Total**	**Trucks**	**SOVs**	**HOVs**	**Total**
AM Peak Hour								
North of Parker Road	500	2,040	760	3,300	410	1,670	620	2,700
Between Parker Road & Hasley Canyon Road	610	2,990	1,100	4,700	400	1,970	730	3,100
Between Hasley Canyon Road & SR-126	640	3,400	1,260	5,300	580	3,080	1,140	4,800
Between SR-126 & Rye Canyon Road	590	3,150	1,160	4,900	670	3,600	1,330	5,600
Between Rye Canyon Road & Magic Mountain Parkway	610	3,280	1,210	5,100	670	3,600	1,330	5,600
Between Magic Mountain Pkwy & Valencia Boulevard	620	3,490	1,290	5,400	710	4,010	1,480	6,200
Between Valencia Boulevard & McBean Parkway	640	3,990	1,470	6,100	740	4,570	1,690	7,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	600	3,870	1,430	5,900	700	4,530	1,670	6,900
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	630	4,360	1,610	6,600	620	4,290	1,590	6,500
Between Calgrove Boulevard & SR-14	630	4,430	1,640	6,700	570	4,040	1,490	6,100
South of SR-14	1,250	9,670	3,580	14,500	710	5,470	2,020	8,200
PM Peak Hour								
North of Parker Road	620	2,540	940	4,100	710	2,910	1,080	4,700
Between Parker Road & Hasley Canyon Road	610	2,990	1,100	4,700	790	3,880	1,430	6,100
Between Hasley Canyon Road & SR-126	770	4,110	1,520	6,400	780	4,180	1,540	6,500
Between SR-126 & Rye Canyon Road	820	4,370	1,610	6,800	700	3,720	1,380	5,800
Between Rye Canyon Road & Magic Mountain Parkway	970	5,200	1,930	8,100	700	3,720	1,380	5,800
Between Magic Mountain Pkwy & Valencia Boulevard	900	5,040	1,860	7,800	710	4,010	1,480	6,200
Between Valencia Boulevard & McBean Parkway	860	5,360	1,980	8,200	710	4,450	1,640	6,800
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	810	5,250	1,940	8,000	710	4,590	1,700	7,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	700	4,890	1,810	7,400	690	4,830	1,780	7,300
Between Calgrove Boulevard & SR-14	700	4,890	1,810	7,400	680	4,760	1,760	7,200
South of SR-14	850	6,610	2,440	9,900	1,210	9,410	3,480	14,100

SOV = Single Occupant Vehicle
HOV = High Occupancy Vehicle (2+ Persons/Vehicle) and is HOV lane eligible

Table B-3: Peak Hour Traffic Volumes by Vehicle Type and Occupancy – Year 2030, Constrained Flow Model

	Southbound				Northbound			
I-5 Segment	**Trucks**	**SOVs**	**HOVs**	**Total**	**Trucks**	**SOVs**	**HOVs**	**Total**
AM Peak Hour								
North of Parker Road	780	3,270	1,150	5,200	620	2,580	900	4,100
Between Parker Road & Hasley Canyon Road	800	4,370	1,530	6,700	590	3,190	1,120	4,900
Between Hasley Canyon Road & SR-126	760	4,770	1,670	7,200	680	4,310	1,510	6,500
Between SR-126 & Rye Canyon Road	740	4,630	1,630	7,000	720	4,570	1,610	6,900
Between Rye Canyon Road & Magic Mountain Parkway	760	4,770	1,670	7,200	720	4,570	1,610	6,900
Between Magic Mountain Pkwy & Valencia Boulevard	770	4,830	1,700	7,300	750	4,700	1,650	7,100
Between Valencia Boulevard & McBean Parkway	850	5,360	1,890	8,100	800	5,030	1,770	7,600
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	740	5,220	1,840	7,800	710	5,020	1,770	7,500
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	690	4,890	1,720	7,300	670	4,680	1,650	7,000
Between Calgrove Boulevard & SR-14	700	4,960	1,740	7,400	600	4,290	1,510	6,400
South of SR-14	1,520	11,970	4,210	17,700	790	6,220	2,190	9,200
PM Peak Hour								
North of Parker Road	980	4,080	1,440	6,500	1,020	4,280	1,500	6,800
Between Parker Road & Hasley Canyon Road	910	4,950	1,740	7,600	980	5,340	1,880	8,200
Between Hasley Canyon Road & SR-126	960	6,020	2,120	9,100	910	5,760	2,030	8,700
Between SR-126 & Rye Canyon Road	970	6,090	2,140	9,200	810	5,100	1,790	7,700
Between Rye Canyon Road & Magic Mountain Parkway	1,060	6,690	2,350	10,100	810	5,100	1,790	7,700
Between Magic Mountain Pkwy & Valencia Boulevard	1,030	6,490	2,280	9,800	830	5,230	1,840	7,900
Between Valencia Boulevard & McBean Parkway	1,050	6,620	2,330	10,000	870	5,500	1,930	8,300
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	910	6,430	2,260	9,600	800	5,620	1,980	8,400
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	850	5,960	2,090	8,900	800	5,620	1,980	8,400
Between Calgrove Boulevard & SR-14	830	5,900	2,070	8,800	770	5,500	1,930	8,200
South of SR-14	990	7,780	2,730	11,500	1,440	11,290	3,970	16,700

SOV = Single Occupant Vehicle
HOV = High Occupancy Vehicle (2+ Persons/Vehicle) and is HOV lane eligible

Table B-4: Peak Hour Traffic Volumes by Vehicle Type and Occupancy – Year 2030, Demand Model

	Southbound				Northbound			
I-5 Segment	**Trucks**	**SOVs**	**HOVs**	**Total**	**Trucks**	**SOVs**	**HOVs**	**Total**
AM Peak Hour								
North of Parker Road	860	3,630	1,210	5,700	660	2,800	940	4,400
Between Parker Road & Hasley Canyon Road	940	4,690	1,570	7,200	690	3,460	1,150	5,300
Between Hasley Canyon Road & SR-126	870	5,270	1,760	7,900	760	4,600	1,540	6,900
Between SR-126 & Rye Canyon Road	870	5,270	1,760	7,900	800	4,870	1,630	7,300
Between Rye Canyon Road & Magic Mountain Parkway	920	5,610	1,870	8,400	800	4,870	1,630	7,300
Between Magic Mountain Pkwy & Valencia Boulevard	860	5,800	1,940	8,600	820	5,530	1,850	8,200
Between Valencia Boulevard & McBean Parkway	960	6,480	2,160	9,600	910	6,140	2,050	9,100
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	900	6,450	2,150	9,500	900	6,450	2,150	9,500
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	900	6,450	2,150	9,500	890	6,380	2,130	9,400
Between Calgrove Boulevard & SR-14	900	6,520	2,180	9,600	840	6,040	2,020	8,900
South of SR-14	1,980	15,760	5,260	23,000	1,060	8,430	2,810	12,300
PM Peak Hour								
North of Parker Road	1,080	4,590	1,530	7,200	1,140	4,840	1,620	7,600
Between Parker Road & Hasley Canyon Road	1,080	5,410	1,810	8,300	1,180	5,940	1,980	9,100
Between Hasley Canyon Road & SR-126	1,080	6,540	2,180	9,800	1,060	6,400	2,140	9,600
Between SR-126 & Rye Canyon Road	1,130	6,880	2,290	10,300	980	5,940	1,980	8,900
Between Rye Canyon Road & Magic Mountain Parkway	1,330	8,080	2,690	12,100	980	5,940	1,980	8,900
Between Magic Mountain Pkwy & Valencia Boulevard	1,210	8,170	2,720	12,100	950	6,410	2,140	9,500
Between Valencia Boulevard & McBean Parkway	1,300	8,770	2,930	13,000	1,030	6,950	2,320	10,300
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	1,170	8,350	2,780	12,300	1,000	7,120	2,380	10,500
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	1,130	8,080	2,690	11,900	1,040	7,390	2,470	10,900
Between Calgrove Boulevard & SR-14	1,100	7,950	2,650	11,700	1,030	7,480	2,490	11,000
South of SR-14	1,330	10,630	3,540	15,500	1,920	15,280	5,100	22,300

SOV = Single Occupant Vehicle
HOV = High Occupancy Vehicle (2+ Persons/Vehicle) and is HOV lane eligible

APPENDIX C
EARLY IMPLEMENTATION PROJECTS TRAFFIC ANALYSIS

I-5 PA&ED HOV & TRUCK LANES EARLY IMPLEMENTATION PROJECTS (EIP) TRAFFIC ANALYSIS

07-LA-5, PM R 45.5/R 59.0
EA 2332E0

Southbound Truck Climbing Lane EA 2332A
Northbound HOV Lane Extension EA 2332C

Prepared for:

The California Department of Transportation

July 9, 2007

Prepared By:
DMJM Harris
999 Town & Country Road
Orange, CA 92868

DMJM HARRIS | AECOM

Table of Contents

List of Tables

INTRODUCTION

This traffic analysis evaluates the traffic impact of two early implementation projects (EIP) from the I-5 PA&ED Truck & HOV Lane Widening Improvements from SR-14 to the Parker Road Interchange (07-LA-5, PM R 45.4/R 59.0, EA 2332E0). The two early implementation components are the extension of the northbound HOV lane on I-5 from the SR-14 interchange north to the summit (EA 2332C) and a truck climbing lane southbound from the Lyons Canyon/Pico Canyon Road interchange to the SR-14 interchange (EA 2332A). The analysis conducted considered the following three scenarios:

1. Existing 2006 Conditions
2. 2010 Conditions with No Improvements
3. 2010 Conditions with Improvements

Vehicle counts were obtained from "I-5 HOV and Truck Lanes Projects – SR-14 to Parker Road Traffic Volume Data Summary," prepared by Austin-Foust and Associates, Inc. A copy of the count information from the document is provided in the Appendix. The existing counts given in the document were obtained from multiple sources, including published Caltrans data and field surveys by Austin-Foust Associates, Inc. and Korve Engineering, Inc. Future year forecasts were obtained from the Santa Clarita Valley Consolidated Traffic Model (SCVCTM). The SCVCTM was developed jointly by the County of Los Angeles Department of Public Works and the City of Santa Clarita. The model is the primary tool used by both agencies for transportation planning in this area.

The analysis was accomplished with HCS2000 software using the freeways module. Two freeway sections for each improvement were analyzed for each scenario. The next two sections describe the details of the analyses followed by the results of the analyses.

TRUCK CLIMBING LANE ANALYSIS DETAILS

A truck climbing lane is proposed to be added to the existing four lane southbound facility. The analysis uses counts obtained 1) between Lyons Avenue/Pico Canyon Road and Calgrove Boulevard and 2) between Calgrove Boulevard and SR-14. These two sections were analyzed considering each of the analysis scenarios.

It was assumed that most of the trucks would remain in the outermost lane as they climbed up the grade. However, not all trucks are heavily loaded and will enter the inner lanes in order to pass slow moving trucks. The outermost lane was removed from the analysis of all the scenarios and the trucks anticipated to use that lane were subtracted from the volume. However, in order to represent the lighter trucks passing in the inner lanes a small percentage of trucks was used in the analysis. Approximately 20% of the trucks (2% of the total traffic stream) were assumed to use the inner lanes of the freeway. Tables summarizing these calculations are provided in the Appendix.

To summarize, an analysis of one less lane was done instead of the total number of lanes and the volume was reduced to reflect the trucks that would use the outermost lane. The number of trucks in the outermost lane is not expected to reach the capacity of the truck lane, estimated at 1200 trucks per hour, by 2010. This was done for all scenarios; thus, the outermost lane is considered the truck climbing lane even in the existing and 2010 no improvements scenarios.

The grades used for the two sections analyzed were provided by Caltrans (California Department of Transportation).

HOV LANE EXTENSION ANALYSIS DETAILS

This analysis included two sections: 1) between the off-ramp to SR-14 northbound and the on-ramp from the SR-14 southbound and 2) between the on-ramp from SR-14 southbound and the truck route on-ramp.

Volume data was not available for the two sections listed above. However, by subtracting known off-ramp data and adding known on-ramp data the mainline volumes in these sections were determined for the existing condition. Model data for the on/off-ramps in 2010 was not available; thus, the process used for the existing conditions could not be repeated for the 2010 scenarios. However, the ramp volumes were estimated by calculated the percent change between the existing mainline volumes and 2010 model mainline volumes and then applying the same percent change to the ramp volumes. The same process was then used to obtain the 2010 volumes in the sections desired for the analysis.

The analysis of the existing and 2010 with no improvements was a straight forward three lane section analysis. The 2010 scenario with improvements was analyzed as a four lane freeway even though the added lane was a HOV lane. Based on an occupancy study conducted in April 2005, Korve Engineering employees found that eligible vehicles for the HOV lane make up 27% of the total volume. It is expected that the maximum percentage of volume in the HOV lane of a four lane freeway would be 25%. Any greater proportion of the volume would result in a negative benefit for eligible vehicles. Therefore, eligible motorists would chose to use the mixed flow lanes instead of the HOV lane.

RESULTS OF THE ANALYSIS

An HCM Level of Service (LOS) analysis was used to compare the impacts of the study scenarios. The detailed report sheets are provided in the Appendix. LOS is a quality measure describing operation conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six LOS are defined for each type of facility that has analysis procedures available. Letters designate each level, from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each LOS

represents a range of operating conditions and the driver's perception of those conditions. The LOS for a basic freeway segment is based on density given in units of passenger cars per mile per lane (*1*). The LOS thresholds are given in Table 1.

TABLE 1
LOS Thresholds for a Basic Freeway Segment (*1*)

LOS	Density Range (pc/mi/ln)
A	0-11
B	>11-18
C	>18-26
D	>26-35
E	>35-45
F	>45

The results of analysis of the truck lane addition to southbound I-5 are provided in Table 2. The approach of the analysis was to assume that one lane was not usable by passenger cars because of slow moving trucks. The analysis was done by subtracting most of the trucks from the volume and subtracting one lane. For example, the 2006 existing condition was analyzed as a three lane freeway with 2% percent trucks. The analysis based on the methodology is anticipated to be representative of actual conditions in this segment of I-5. Based on this analysis the addition of a truck lane will improve the peak hour operating conditions in 2010 from LOS E and F to LOS C and D.

TABLE 2
Southbound Truck Lane Addition LOS Analysis Results

Freeway Section		SB Between Lyons Ave & Calgrove Blvd		SB Between Calgrove Blvd & SR-14	
Peak Hour		AM	PM	AM	PM
2006 Existing	LOS	E	E	F	F
	Density (pc/mi/ln)	35.5	38.3	*	*
	Ave pc Speed (mph)	61.1	58.6	*	*
2010 No Improvements	LOS	E	E	F	F
	Density (pc/mi/ln)	36.4	43.3	*	*
	Ave pc Speed (mph)	60.3	54.6	*	*
2010 With Truck Lane	LOS	C	D	D	D
	Density (pc/mi/ln)	23.8	26.1	27.5	29.3
	Ave pc Speed (mph)	69.2	68.1	67.3	66.0

*Density and average passenger car speed are not calculated when LOS F.

As shown in Table 2, the addition of a southbound truck lane is expected to improve the 2010 operating conditions from an unacceptable (LOS E or F) to an acceptable (LOS C or D) service level. The single truck lane is expected to operate at an acceptable level of service. The highest flow rate is expected to be about 410 trucks per hour. Capacity of a truck lane in the grapevine was measured by Caltrans to be 1200 trucks per hour. Based on this capacity, the truck lane is expected to have a volume-to-capacity ratio of 0.34.

The results of the HOV lane extension analysis are provided in Table 3. The analysis shows that extending the HOV lane will generally improve the operating conditions by one service level during the peak hours in 2010.

TABLE 3
Northbound HOV Lane Extension LOS Analysis Results

Freeway Section		NB Between Off-Ramp to SR-14 & On-Ramp From SR-14		NB Between On-ramp From SR-14 & Truck Route On-Ramp	
Peak Hour		AM	PM	AM	PM
2006 Existing	LOS	B	C	C	D
	Density (pc/mi/ln)	17.8	25.4	19.5	30.2
	Ave pc Speed (mph)	70.0	68.5	70.0	65.3
2010 No Improvements	LOS	C	C	C	D
	Density (pc/mi/ln)	18.6	25.9	20.4	30.9
	Ave pc Speed (mph)	70.0	68.2	69.9	64.8
2010 With Improvements	LOS	B	C	B	C
	Density (pc/mi/ln)	13.9	18.9	15.3	21.5
	Ave pc Speed (mph)	70.0	70.0	70.0	69.8

REFERENCES

1. Highway Capacity Manual 2000. Transportation Research Board, National Research Council, Washington, D.C., 2000, pp. 2-2 – 2-3.

APPENDIX

I-5 HOV and Truck Lanes Projects – SR-14 to Parker Road Traffic Volume Data Summary

Southbound Truck Lane Volume Calculations

HCS2000 Report Sheets

Southbound Truck Climbing Lane Analysis
Northbound HOV Lane Extension Analysis

I-5 HOV and Truck Lanes Projects – SR-14 to Parker Road Traffic Volume Data Summary

DMJM HARRIS | AECOM

Table 2: Existing (2006) Traffic Volumes

I-5 Segment	% Trucks (Daily)	AM Peak Hour		PM Peak Hour		ADT
		SB	NB	SB	NB	
North of Parker Road	26.6%	1,600	1,190	2,040	2,250	65,000
Between Parker Road & Hasley Canyon Road	20.8%	2,210	1,570	2,420	2,790	83,000
Between Hasley Canyon Road & SR-126	17.3%	3,110	2,170	3,010	3,620	100,000
Between SR-126 & Rye Canyon Road	15.3%	3,420	3,340	4,150	4,080	124,000
Between Rye Canyon Road & Magic Mountain Parkway	14.2%	4,200	3,340	5,350	4,080	134,000
Between Magic Mountain Parkway & Valencia Boulevard	12.2%	4,490	4,490	5,600	5,270	156,000
Between Valencia Boulevard & McBean Parkway	10.6%	5,310	5,430	6,420	6,050	179,000
Between McBean Parkway & Lyons Avenue/Pico Canyon Road	10.1%	5,730	5,560	6,450	6,610	189,000
Between Lyons Avenue/Pico Canyon Road & Calgrove Blvd.	9.5%	6,320	5,620	6,460	7,020	199,000
Between Calgrove Boulevard & SR-14	9.4%[1]	6,610	5,600	6,410	6,970	202,000
South of SR-14	5.8%	13,270	7,390	9,180	13,710	325,000

[1] Peak Hour Truck Percentages (2005 Survey): AM NB = 7.0%; AM SB = 8.2%; PM NB = 6.5%; PM SB = 6.7%

Sources:
Korve Engineering, Mainline Counts (Peak Hour), April 2005
Austin-Foust Associates, Inc., Ramp Counts (Peak Hour), 2004-2006
Korve Engineering, Mainline Truck Counts (Peak Hour), April 2005
Caltrans, Mainline AADT, 2005
Caltrans, Ramp Volumes ADT, 2005
Caltrans, AADT Daily Truck Traffic, 2004
Caltrans, Count Station Data (Hourly), 2003

Table 8: Year 2010 – Early Implementation Project Opening Day Forecasts

I-5 Segment	AM Peak Hour		PM Peak Hour		ADT
	SB	NB	SB	NB	
North of Parker Road	2,400	1,900	3,000	3,400	100,000
Between Parker Road & Hasley Canyon Road	3,400	2,300	3,500	4,400	122,000
Between Hasley Canyon Road & SR-126	4,200	3,400	4,600	5,000	138,000
Between SR-126 & Rye Canyon Road	4,100	4,400	5,400	4,900	146,000
Between Rye Canyon Road & Magic Mountain Parkway	4,600	4,400	6,600	4,900	160,000
Between Magic Mountain Pkwy & Valencia Boulevard	4,800	5,300	6,500	5,700	176,000
Between Valencia Boulevard & McBean Parkway	5,600	6,100	7,100	6,400	194,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	5,800	6,200	7,100	6,800	204,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	6,400	6,000	6,800	7,100	206,000
Between Calgrove Boulevard & SR-14	6,600	5,800	6,800	7,100	214,000
South of SR-14	13,800	7,700	9,500	13,900	394,000

Source: SCVCTM Ver. 4.1

Table 9: Year 2015 – Full Project Opening Day Forecasts

I-5 Segment	AM Peak Hour		PM Peak Hour		ADT
	SB	NB	SB	NB	
North of Parker Road	3,300	2,700	4,100	4,700	137,000
Between Parker Road & Hasley Canyon Road	4,700	3,100	4,700	6,100	163,000
Between Hasley Canyon Road & SR-126	5,300	4,800	6,400	6,500	179,000
Between SR-126 & Rye Canyon Road	4,900	5,600	6,800	5,800	171,000
Between Rye Canyon Road & Magic Mountain Parkway	5,100	5,600	8,100	5,800	191,000
Between Magic Mountain Pkwy & Valencia Boulevard	5,400	6,200	7,800	6,200	203,000
Between Valencia Boulevard & McBean Parkway	6,100	7,000	8,200	6,800	216,000
Between McBean Pkwy & Lyons Ave./Pico Canyon Rd.	5,900	6,900	8,000	7,000	226,000
Between Lyons Ave./Pico Canyon Rd. & Calgrove Blvd.	6,600	6,500	7,400	7,300	220,000
Between Calgrove Boulevard & SR-14	6,700	6,100	7,400	7,200	229,000
South of SR-14	14,500	8,200	9,900	14,100	471,000

Source: SCVCTM Ver. 4.1

Southbound Truck Lane Volume Calculations

2006 Existing Southbound Traffic on I-5

Section	AM				Remaining volume to use inner lanes	PM				Remaining volume to use inner lanes
	Volume (veh/hr)	Total % Trucks	% Trucks to use outermost lane	Number of trucks to use outermost lane (tr/hr)		Volume (veh/hr)	Total % Trucks	% Trucks to use outermost lane	Number of trucks to use outermost lane (tr/hr)	
SB Between Lyons Ave & Calgrove Blvd	6320	8.2%	6.2%	392	**5928**	6460	6.7%	4.7%	304	**6156**
SB Between Calgrove Blvd & SR-14	6610	8.2%	6.2%	410	**6200**	6410	6.7%	4.7%	301	**6109**

2010 Southbound Traffic on I-5

Section	AM				Remaining volume to use inner lanes	PM				Remaining volume to use inner lanes
	Volume (veh/hr)	Total % Trucks	% Trucks to use outermost lane	Number of trucks to use outermost lane (tr/hr)		Volume (veh/hr)	Total % Trucks	% Trucks to use outermost lane	Number of trucks to use outermost lane (tr/hr)	
SB Between Lyons Ave & Calgrove Blvd	6400	8.2%	6.2%	397	**6003**	6800	6.7%	4.7%	320	**6480**
SB Between Calgrove Blvd & SR-14	6600	8.2%	6.2%	409	**6191**	6800	6.7%	4.7%	320	**6480**

HCS2000 Report Sheets

Southbound Truck Climbing Land Analysis
Northbound HOV Lane Extension Analysis

Southbound Truck Climbing Lane Analysis

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Lyons Ave & Calgrove B
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	Removing lane for trucks

Flow Inputs and Adjustments

Volume, V	5928	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1528	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	2166	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2166	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	61.1	mi/h
Number of lanes, N	3	
Density, D	35.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Lyons Ave & Calgrove B
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	Removing lane for trucks

Flow Inputs and Adjustments

Volume, V	6156	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1587	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	2249	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2249	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	58.6	mi/h
Number of lanes, N	3	
Density, D	38.3	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Calgrove Blvd & SR-14
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	Removing lane for trucks

Flow Inputs and Adjustments

Volume, V	6200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1598	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	1.84	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	2467	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2467	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Calgrove Blvd & SR-14
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	Removing lane for trucks

Flow Inputs and Adjustments

Volume, V	6109	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1574	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	1.84	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	2431	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2431	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Lyons Ave & Calgrove B
Jurisdiction:	
Analysis Year:	2010 No Improvements
Description:	Removing truck lane

Flow Inputs and Adjustments

Volume, V	6003	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1547	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	2193	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2193	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	60.3	mi/h
Number of lanes, N	3	
Density, D	36.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Lyons Ave & Calgrove B
Jurisdiction:	
Analysis Year:	2010 No Improvements

Description: Removing truck lane

Flow Inputs and Adjustments

Volume, V	6480	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1670	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	2367	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2367	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	54.6	mi/h
Number of lanes, N	3	
Density, D	43.3	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Calgrove Blvd & SR-14
Jurisdiction:	
Analysis Year:	2010 No Improvements

Description: Removing truck lane

Flow Inputs and Adjustments

Volume, V	6191	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1596	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	1.84	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	2463	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2463	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Calgrove Blvd & SR-14
Jurisdiction:	
Analysis Year:	2010 No Improvements
Description:	Removing truck lane

Flow Inputs and Adjustments

Volume, V	6480	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1670	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	1.84	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	2578	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2578	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Lyons Ave & Calgrove B
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	Removing truck lane

Flow Inputs and Adjustments

Volume, V	6003	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1547	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	1645	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1645	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.2	mi/h
Number of lanes, N	4	
Density, D	23.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Lyons Ave & Calgrove B
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	Removing truck lane

Flow Inputs and Adjustments

Volume, V	6480	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1670	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	1776	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1776	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.1	mi/h
Number of lanes, N	4	
Density, D	26.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Calgrove Blvd & SR-14
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	Removing truck lane

Flow Inputs and Adjustments

Volume, V	6191	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1596	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	1.84	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	1848	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1848	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.3	mi/h
Number of lanes, N	4	
Density, D	27.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/SB
From/To:	Between Calgrove Blvd & SR-14
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	Removing truck lane

Flow Inputs and Adjustments

Volume, V	6480	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1670	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	1.84	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	1934	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1934	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.0	mi/h
Number of lanes, N	4	
Density, D	29.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

Northbound HOV Lane Extension Analysis

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 Off to SR-14 On-Ramp
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	

Flow Inputs and Adjustments

Volume, V	3450	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	889	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1248	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1248	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 Off to SR-14 On-Ramp
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	

Flow Inputs and Adjustments

Volume, V	4810	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1240	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	2.0*	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1740	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1740	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.5	mi/h
Number of lanes, N	3	
Density, D	25.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 On Ramp & Truck Rte On
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	

Flow Inputs and Adjustments

Volume, V	3780	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	974	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1367	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1367	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	19.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 On Ramp & Truck Rte On
Jurisdiction:	
Analysis Year:	Existing 2006
Description:	

Flow Inputs and Adjustments

Volume, V	5460	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1407	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1975	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1975	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.3	mi/h
Number of lanes, N	3	
Density, D	30.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 Off To SR-14 On-Ramp
Jurisdiction:	
Analysis Year:	2010 No Improvements
Description:	

Flow Inputs and Adjustments

Volume, V	3595	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	927	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1300	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1300	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	18.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 Off to SR-14 On-Ramp
Jurisdiction:	
Analysis Year:	2010 No Improvements
Description:	

Flow Inputs and Adjustments

Volume, V	4877	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1257	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1764	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1764	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.2	mi/h
Number of lanes, N	3	
Density, D	25.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 On Ramp & Truck Rte On
Jurisdiction:	
Analysis Year:	2010 No Improvements
Description:	

Flow Inputs and Adjustments

Volume, V	3939	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1015	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1425	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1425	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	3	
Density, D	20.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 On Ramp & Truck Rte On
Jurisdiction:	
Analysis Year:	2010 No Improvements
Description:	

Flow Inputs and Adjustments

Volume, V	5536	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1427	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	2003	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2003	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.8	mi/h
Number of lanes, N	3	
Density, D	30.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 Off and SR-14 On-Ramp
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	

Flow Inputs and Adjustments

Volume, V	3595	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	927	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	975	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	975	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	13.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 Off to SR-14 On-Ramp
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	

Flow Inputs and Adjustments

Volume, V	4877	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1257	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1323	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1323	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	18.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	AM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 On Ramp & Truck Rte On
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	

Flow Inputs and Adjustments

Volume, V	3939	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1015	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1069	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1069	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	15.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

Salt Lake City Office
Korve Engineering
935 E. South Union Avenue
Suite D203
Midvale, UT 84047
Phone: 801-569-2131 Fax: 801-569-2149
E-mail: lseegmiller@korve.com

Operational Analysis

Analyst:	Luke Seegmiller
Agency or Company:	Korve/DMJM Harris
Date Performed:	1/25/2007
Analysis Time Period:	PM Peak
Freeway/Direction:	I-5/NB
From/To:	SR-14 On Ramp & Truck Rte On
Jurisdiction:	
Analysis Year:	2010 With EIP
Description:	

Flow Inputs and Adjustments

Volume, V	5536	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1427	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, fp	0.95	
Flow rate, vp	1502	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1502	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	4	
Density, D	21.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX D

HCS WORKSHEETS

(See also Appendix C for Early Implementation Segments)

APPENDIX D (Cont.)
HIGHWAY CAPACITY MANUAL WORKSHEETS

a. Existing Conditions – AM Peak Hour

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 Ramp to SR14 Ramp
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	3450	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	889	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1248	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1248	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR14 Ramp to Balboa
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	4690	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1209	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.43	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1697	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1697	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.8	mi/h
Number of lanes, N	3	
Density, D	24.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	3780	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	974	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1367	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1367	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	19.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Truck Route Bypass to SR14
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	4980	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1284	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.30	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1351	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1351	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Truck Route Bypass to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	5600	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1443	v
Trucks and buses	9	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.957	
Driver population factor, vp	0.95	
Flow rate, vp	1588	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1588	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.5	mi/h
Number of lanes, N	4	
Density, D	22.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	6200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1598	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	2467	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2467	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Calgrove to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	5620	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1448	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1601	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1601	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.4	mi/h
Number of lanes, N	4	
Density, D	23.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Pico to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	5928	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1528	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	2166	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2166	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	61.1	mi/h
Number of lanes, N	3	
Density, D	35.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Pico to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	5560	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1433	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	1659	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1659	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.1	mi/h
Number of lanes, N	4	
Density, D	24.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	McBean to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	5730	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1477	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1632	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1632	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.3	mi/h
Number of lanes, N	4	
Density, D	23.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	McBean to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	5430	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1399	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1554	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1554	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	4	
Density, D	22.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Valencia to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	5310	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1369	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	2.4	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.867	
Driver population factor, vp	0.95	
Flow rate, vp	1662	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1662	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.1	mi/h
Number of lanes, N	4	
Density, D	24.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Valencia to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	4490	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1157	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1291	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1291	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	18.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	4490	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1157	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	0.95	
Flow rate, vp	1364	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1364	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Magic Mountain to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	3340	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	861	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.935	
Driver population factor, vp	0.95	
Flow rate, vp	970	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	970	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	13.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Rye Canyon to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	4200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1082	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.935	
Driver population factor, vp	0.95	
Flow rate, vp	1219	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1219	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	17.4	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Rye Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	3340	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	861	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	974	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	974	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	13.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR-126 to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	3420	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	881	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	997	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	997	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	14.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR-126 to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	2170	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	559	v
Trucks and buses	17	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.922	
Driver population factor, vp	0.95	
Flow rate, vp	639	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	639	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	9.1	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Hasley Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	3110	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	802	v
Trucks and buses	17	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.922	
Driver population factor, vp	0.95	
Flow rate, vp	915	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	915	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	13.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Hasley Canyon to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	1570	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	405	v
Trucks and buses	20	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	469	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	469	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	6.7	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Parker to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	2210	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	570	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, vp	0.95	
Flow rate, vp	663	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	663	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	9.5	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Parker to Lake Hughes
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	1190	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	307	v
Trucks and buses	25	%
Recreational vehicles	3	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.884	
Driver population factor, vp	0.95	
Flow rate, vp	365	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	365	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	5.2	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Lake Hughes to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	1600	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	412	v
Trucks and buses	25	%
Recreational vehicles	3	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.884	
Driver population factor, vp	0.95	
Flow rate, vp	491	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	491	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	7.0	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX D (Cont.)
HIGHWAY CAPACITY MANUAL WORKSHEETS

b. Existing Conditions – PM Peak Hour

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 Ramp to SR14 Ramp
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	4810	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1240	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1740	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1740	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.5	mi/h
Number of lanes, N	3	
Density, D	25.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR14 Ramp to Balboa
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	4485	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1156	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.43	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1622	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1622	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.3	mi/h
Number of lanes, N	3	
Density, D	23.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	5460	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1407	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1975	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1975	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.3	mi/h
Number of lanes, N	3	
Density, D	30.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Truck Route Bypass to SR14
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	5060	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1304	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.30	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1373	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1373	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Truck Route Bypass to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	6970	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1796	v
Trucks and buses	9	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.957	
Driver population factor, vp	0.95	
Flow rate, vp	1976	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1976	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.3	mi/h
Number of lanes, N	4	
Density, D	30.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	6109	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1574	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	2431	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2431	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Calgrove to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	7020	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1809	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2000	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2000	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	4	
Density, D	30.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Pico to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	6156	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1587	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	2249	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2249	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	58.6	mi/h
Number of lanes, N	3	
Density, D	38.3	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Pico to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	6610	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1704	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	1973	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1973	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.4	mi/h
Number of lanes, N	4	
Density, D	30.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	McBean to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	6450	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1662	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1837	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1837	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.4	mi/h
Number of lanes, N	4	
Density, D	27.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	McBean to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	6050	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1559	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1732	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1732	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.5	mi/h
Number of lanes, N	4	
Density, D	25.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Valencia to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	6420	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1655	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	2.4	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.867	
Driver population factor, vp	0.95	
Flow rate, vp	2010	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2010	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.7	mi/h
Number of lanes, N	4	
Density, D	31.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Valencia to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	6050	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1559	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1740	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1740	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.5	mi/h
Number of lanes, N	4	
Density, D	25.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	5600	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1443	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	0.95	
Flow rate, vp	1702	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1702	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.8	mi/h
Number of lanes, N	4	
Density, D	24.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Magic Mountain to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	4080	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1052	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.935	
Driver population factor, vp	0.95	
Flow rate, vp	1184	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1184	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	16.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Rye Canyon to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	5350	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1379	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.935	
Driver population factor, vp	0.95	
Flow rate, vp	1553	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1553	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	4	
Density, D	22.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Rye Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	4080	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1052	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1190	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1190	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	17.0	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR-126 to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	4150	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1070	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1210	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1210	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	17.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR-126 to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	4080	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1052	v
Trucks and buses	17	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.922	
Driver population factor, vp	0.95	
Flow rate, vp	1201	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1201	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	17.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Hasley Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	3010	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	776	v
Trucks and buses	17	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.922	
Driver population factor, vp	0.95	
Flow rate, vp	886	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	886	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	12.7	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Hasley Canyon to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	2790	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	719	v
Trucks and buses	20	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	833	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	833	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	11.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Parker to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	2420	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	624	v
Trucks and buses	21	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.905	
Driver population factor, vp	0.95	
Flow rate, vp	725	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	725	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	10.4	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Parker to Lake Hughes
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	2250	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	580	v
Trucks and buses	25	%
Recreational vehicles	3	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.884	
Driver population factor, vp	0.95	
Flow rate, vp	690	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	690	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	9.9	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Lake Hughes to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2006
Description:	I-5 PA&ED - Existing

Flow Inputs and Adjustments

Volume, V	2040	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	526	v
Trucks and buses	25	%
Recreational vehicles	3	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.884	
Driver population factor, vp	0.95	
Flow rate, vp	626	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	626	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	8.9	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX D (Cont.)
HIGHWAY CAPACITY MANUAL WORKSHEETS

c. 2015 No-Build Conditions – AM Peak Hour

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 Ramp to SR14 Ramp
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	3760	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	969	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1428	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1428	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	3	
Density, D	20.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR14 Ramp to Balboa
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	4760	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1227	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.43	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1722	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1722	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.6	mi/h
Number of lanes, N	3	
Density, D	25.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	4120	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1062	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1490	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1490	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	3	
Density, D	21.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Truck Route Bypass to SR14
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	5050	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1302	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.30	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1370	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1370	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Truck Route Bypass to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1572	v
Trucks and buses	9	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.957	
Driver population factor, vp	0.95	
Flow rate, vp	1729	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1729	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.6	mi/h
Number of lanes, N	4	
Density, D	25.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6231	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1606	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	2479	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2479	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Calgrove to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6500	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1675	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1852	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1852	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.2	mi/h
Number of lanes, N	4	
Density, D	27.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Pico to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6072	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1565	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	2218	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2218	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	59.6	mi/h
Number of lanes, N	3	
Density, D	37.2	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Pico to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1778	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	2059	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2059	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.6	mi/h
Number of lanes, N	4	
Density, D	32.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	McBean to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	5900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1521	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1681	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1681	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.9	mi/h
Number of lanes, N	4	
Density, D	24.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	McBean to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	7000	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1804	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2004	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2004	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.8	mi/h
Number of lanes, N	4	
Density, D	30.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Valencia to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1572	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	2.4	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.867	
Driver population factor, vp	0.95	
Flow rate, vp	1910	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1910	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.4	mi/h
Number of lanes, N	4	
Density, D	28.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Valencia to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1598	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1783	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1783	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.0	mi/h
Number of lanes, N	4	
Density, D	26.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	5400	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1392	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	0.95	
Flow rate, vp	1641	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1641	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.2	mi/h
Number of lanes, N	4	
Density, D	23.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Magic Mountain to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	5600	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1443	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1610	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1610	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.4	mi/h
Number of lanes, N	4	
Density, D	23.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Rye Canyon to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	5100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1314	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1467	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1467	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	4	
Density, D	21.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Rye Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	5600	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1443	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1610	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1610	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.4	mi/h
Number of lanes, N	4	
Density, D	23.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR-126 to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	4900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1263	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1409	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1409	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	20.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR-126 to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	4800	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1237	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1380	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1380	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Hasley Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	5300	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1366	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1524	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1524	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.7	mi/h
Number of lanes, N	4	
Density, D	21.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Hasley Canyon to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	3100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	799	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	896	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	896	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	12.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Parker to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	4700	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1211	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	1358	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1358	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Parker to Lake Hughes
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	2700	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	696	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	787	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	787	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	11.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Lake Hughes to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	3300	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	851	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	962	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	962	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	13.7	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX D (Cont.)
HIGHWAY CAPACITY MANUAL WORKSHEETS

d. 2015 No-Build Conditions – PM Peak Hour

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 Ramp to SR14 Ramp
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	4970	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1281	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1798	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1798	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.9	mi/h
Number of lanes, N	3	
Density, D	26.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR14 Ramp to Balboa
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	5180	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1335	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.43	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1405	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1405	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	20.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	5640	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1454	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1530	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1530	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.7	mi/h
Number of lanes, N	4	
Density, D	21.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Truck Route Bypass to SR14
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	5840	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1505	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	2112	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2112	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	3	
Density, D	33.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Truck Route Bypass to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	7200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1856	v
Trucks and buses	9	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.957	
Driver population factor, vp	0.95	
Flow rate, vp	2041	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2041	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.0	mi/h
Number of lanes, N	4	
Density, D	31.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6882	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1774	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	2738	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2738	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Calgrove to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	7300	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1881	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2079	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2079	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.2	mi/h
Number of lanes, N	4	
Density, D	32.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Pico to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6808	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1755	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	2487	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2487	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Pico to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	7000	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1804	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	2089	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2089	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	4	
Density, D	33.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	McBean to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	8000	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2062	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2279	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2279	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	57.7	mi/h
Number of lanes, N	4	
Density, D	39.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	McBean to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6800	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1753	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1946	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1946	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.8	mi/h
Number of lanes, N	4	
Density, D	29.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Valencia to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	8200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2113	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	2.4	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.867	
Driver population factor, vp	0.95	
Flow rate, vp	2567	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2567	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Valencia to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1598	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1783	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1783	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.0	mi/h
Number of lanes, N	4	
Density, D	26.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	7800	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2010	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	0.95	
Flow rate, vp	2370	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2370	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	54.5	mi/h
Number of lanes, N	4	
Density, D	43.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Magic Mountain to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	5800	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1495	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1668	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1668	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.0	mi/h
Number of lanes, N	4	
Density, D	24.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Rye Canyon to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	8100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2088	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	2329	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2329	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	56.0	mi/h
Number of lanes, N	4	
Density, D	41.6	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Rye Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	5800	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1495	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1668	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1668	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.0	mi/h
Number of lanes, N	4	
Density, D	24.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR-126 to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6800	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1753	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1956	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1956	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.7	mi/h
Number of lanes, N	4	
Density, D	29.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR-126 to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6500	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1675	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1869	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1869	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	4	
Density, D	27.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Hasley Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6400	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1649	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1840	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1840	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.4	mi/h
Number of lanes, N	4	
Density, D	27.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Hasley Canyon to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	6100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1572	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	1762	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1762	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.3	mi/h
Number of lanes, N	4	
Density, D	25.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Parker to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	4700	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1211	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	1358	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1358	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Parker to Lake Hughes
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	4700	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1211	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1371	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1371	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Lake Hughes to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - No-Build Alternative

Flow Inputs and Adjustments

Volume, V	4100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1057	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1196	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1196	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX D (Cont.)
HIGHWAY CAPACITY MANUAL WORKSHEETS

e. 2015 Build Conditions – AM Peak Hour

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 Ramp to SR14 Ramp
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	678	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	999	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	999	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	14.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR14 Ramp to Balboa
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	3550	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	915	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.43	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1284	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1284	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	18.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	2990	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	771	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1082	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1082	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	15.5	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Truck Route Bypass to SR14
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	3840	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	990	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.30	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1042	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1042	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	14.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Truck Route Bypass to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4540	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1170	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, vp	0.95	
Flow rate, vp	1244	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1244	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative (Single Truck Lane)

Flow Inputs and Adjustments

Volume, V	4980	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1284	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	1486	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1486	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	4	
Density, D	21.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4860	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1253	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1319	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1319	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	18.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Calgrove to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	5370	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1384	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1530	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1530	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.7	mi/h
Number of lanes, N	4	
Density, D	21.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Pico to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4910	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1265	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, vp	0.95	
Flow rate, vp	1345	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1345	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Pico to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	5660	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1459	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	1689	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1689	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.9	mi/h
Number of lanes, N	4	
Density, D	24.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	McBean to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4720	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1216	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1345	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1345	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	McBean to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	5760	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1485	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1649	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1649	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.2	mi/h
Number of lanes, N	4	
Density, D	23.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Valencia to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4920	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1268	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	2.4	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.867	
Driver population factor, vp	0.95	
Flow rate, vp	1232	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	5	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1232	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	5	
Density, D	17.6	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Valencia to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4960	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1278	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1426	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1426	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	4	
Density, D	20.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4320	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1113	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	0.95	
Flow rate, vp	1313	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1313	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	18.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Magic Mountain to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - 2015 Build Alternative

Flow Inputs and Adjustments

Volume, V	4640	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1196	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1334	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1334	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Rye Canyon to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4160	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1072	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1196	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1196	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Rye Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4640	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1196	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1334	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1334	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR-126 to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	3960	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1021	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1139	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1139	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	16.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR-126 to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	3840	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	990	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1104	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1104	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	15.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Hasley Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4360	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1124	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1254	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1254	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	17.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Hasley Canyon to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	2480	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	639	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	717	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	717	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	10.2	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Parker to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	3760	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	969	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	1086	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1086	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	15.5	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Parker to Lake Hughes
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	2700	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	696	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	787	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	787	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	11.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Lake Hughes to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	3300	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	851	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	962	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	962	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	13.7	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX D (Cont.)
HIGHWAY CAPACITY MANUAL WORKSHEETS

f. 2015 Build Conditions – PM Peak Hour

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 Ramp to SR14 Ramp
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	3630	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	936	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1313	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1313	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	18.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR14 Ramp to Balboa
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	3840	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	990	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.43	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1042	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1042	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	14.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4300	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1108	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1167	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1167	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	16.7	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Truck Route Bypass to SR14
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4500	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1160	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1628	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1628	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.3	mi/h
Number of lanes, N	3	
Density, D	23.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Truck Route Bypass to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	5350	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1379	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, vp	0.95	
Flow rate, vp	1466	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1466	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	4	
Density, D	21.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative (Single Truck Lane)

Flow Inputs and Adjustments

Volume, V	5500	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1418	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	1641	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1641	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.2	mi/h
Number of lanes, N	4	
Density, D	23.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	5360	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1381	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1454	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1454	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	4	
Density, D	20.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Calgrove to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	5960	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1536	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1698	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1698	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.8	mi/h
Number of lanes, N	4	
Density, D	24.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Pico to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	5530	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1425	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, vp	0.95	
Flow rate, vp	1515	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1515	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	4	
Density, D	21.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Pico to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	5660	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1459	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	1689	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1689	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.9	mi/h
Number of lanes, N	4	
Density, D	24.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	McBean to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	6660	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1716	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1897	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1897	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.6	mi/h
Number of lanes, N	4	
Density, D	28.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	McBean to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	5460	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1407	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1563	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1563	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	4	
Density, D	22.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Valencia to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	6860	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1768	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	2.4	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.867	
Driver population factor, vp	0.95	
Flow rate, vp	1718	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	5	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1718	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.7	mi/h
Number of lanes, N	5	
Density, D	25.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Valencia to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4960	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1278	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1426	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1426	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	4	
Density, D	20.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	6460	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1665	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	0.95	
Flow rate, vp	1963	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1963	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.5	mi/h
Number of lanes, N	4	
Density, D	30.0	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Magic Mountain to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4640	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1196	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1334	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1334	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Rye Canyon to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	6820	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1758	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1961	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1961	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.6	mi/h
Number of lanes, N	4	
Density, D	29.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Rye Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4640	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1196	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1334	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1334	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR-126 to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	5520	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1423	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1587	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1587	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.5	mi/h
Number of lanes, N	4	
Density, D	22.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR-126 to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	5340	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1376	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1536	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1536	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.7	mi/h
Number of lanes, N	4	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Hasley Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	5120	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1320	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1472	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1472	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	4	
Density, D	21.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Hasley Canyon to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4940	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1273	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	1427	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1427	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	4	
Density, D	20.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Parker to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	3760	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	969	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	1086	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1086	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	15.5	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Parker to Lake Hughes
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4700	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1211	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1371	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1371	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	19.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Lake Hughes to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2015
Description:	I-5 PA&ED - Build Alternative

Flow Inputs and Adjustments

Volume, V	4100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1057	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1196	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1196	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX D (Cont.)
HIGHWAY CAPACITY MANUAL WORKSHEETS

g. 2030 No-Build Conditions – Constrained – AM Peak Hour

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 Ramp to SR14 Ramp
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	3940	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1015	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1496	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1496	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	3	
Density, D	21.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR14 Ramp to Balboa
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5260	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1356	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.43	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1903	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1903	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.5	mi/h
Number of lanes, N	3	
Density, D	28.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	4320	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1113	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1563	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1563	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	3	
Density, D	22.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Truck Route Bypass to SR14
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5580	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1438	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.30	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1514	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1514	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	4	
Density, D	21.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Truck Route Bypass to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6400	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1649	v
Trucks and buses	9	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.957	
Driver population factor, vp	0.95	
Flow rate, vp	1814	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1814	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.7	mi/h
Number of lanes, N	4	
Density, D	26.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6882	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1774	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	2738	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2738	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Calgrove to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7000	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1804	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1994	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1994	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	4	
Density, D	30.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Pico to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6716	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1731	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	2454	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2454	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Pico to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7500	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1933	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	2238	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2238	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	59.0	mi/h
Number of lanes, N	4	
Density, D	37.9	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	McBean to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7800	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2010	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2222	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2222	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	59.5	mi/h
Number of lanes, N	4	
Density, D	37.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	McBean to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7600	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1959	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2175	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2175	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	60.8	mi/h
Number of lanes, N	4	
Density, D	35.8	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Valencia to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	8100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2088	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	2.4	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.867	
Driver population factor, vp	0.95	
Flow rate, vp	2536	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2536	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Valencia to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1830	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2032	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2032	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.2	mi/h
Number of lanes, N	4	
Density, D	31.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7300	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1881	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.901	
Driver population factor, vp	0.95	
Flow rate, vp	2198	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2198	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	60.2	mi/h
Number of lanes, N	4	
Density, D	36.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Magic Mountain to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1778	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1975	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1975	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.3	mi/h
Number of lanes, N	4	
Density, D	30.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:
Agency or Company: AFA
Date Performed: June 07
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 SB
From/To: Rye Canyon to Magic Mountain
Jurisdiction: Los Angeles/District 7
Analysis Year: 2030
Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1856	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2061	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2061	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.6	mi/h
Number of lanes, N	4	
Density, D	32.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Rye Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1778	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1975	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1975	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.3	mi/h
Number of lanes, N	4	
Density, D	30.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:
Agency or Company: AFA
Date Performed: June 07
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 SB
From/To: SR-126 to Rye Canyon
Jurisdiction: Los Angeles/District 7
Analysis Year: 2030
Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7000	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1804	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2004	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2004	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.8	mi/h
Number of lanes, N	4	
Density, D	30.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR-126 to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6500	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1675	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1860	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1860	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.1	mi/h
Number of lanes, N	4	
Density, D	27.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Hasley Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1856	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2061	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2061	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.6	mi/h
Number of lanes, N	4	
Density, D	32.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Hasley Canyon to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	4900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1263	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1409	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1409	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	20.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Parker to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6700	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1727	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1927	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1927	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.1	mi/h
Number of lanes, N	4	
Density, D	29.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Parker to Lake Hughes
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	4100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1057	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1196	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1196	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Lake Hughes to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1340	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1517	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1517	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	4	
Density, D	21.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX D (Cont.)
HIGHWAY CAPACITY MANUAL WORKSHEETS

h. 2030 No-Build Conditions – Constrained – PM Peak Hour

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 Ramp to SR14 Ramp
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5660	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1459	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	2047	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2047	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	32.0	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR14 Ramp to Balboa
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6160	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1588	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	2228	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2228	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	59.3	mi/h
Number of lanes, N	3	
Density, D	37.6	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6420	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1655	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	2322	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2322	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	56.2	mi/h
Number of lanes, N	3	
Density, D	41.3	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Truck Route Bypass to SR14
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6950	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1791	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.30	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1886	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1886	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.8	mi/h
Number of lanes, N	4	
Density, D	28.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Truck Route Bypass to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	8200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2113	v
Trucks and buses	9	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.957	
Driver population factor, vp	0.95	
Flow rate, vp	2325	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2325	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	56.1	mi/h
Number of lanes, N	4	
Density, D	41.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	8184	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2109	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	3256	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3256	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Calgrove to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	8400	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2165	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2393	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2393	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	53.6	mi/h
Number of lanes, N	4	
Density, D	44.6	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Pico to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	8188	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2110	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	2991	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2991	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Pico to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	8400	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2165	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	2507	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2507	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	McBean to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	9600	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2474	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2735	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2735	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:
Agency or Company: AFA
Date Performed: June 07
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 NB
From/To: McBean to Valencia
Jurisdiction: Los Angeles/District 7
Analysis Year: 2030
Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	8300	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2139	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2376	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2376	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	54.3	mi/h
Number of lanes, N	4	
Density, D	43.8	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:
Agency or Company: AFA
Date Performed: June 07
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 SB
From/To: Valencia to McBean
Jurisdiction: Los Angeles/District 7
Analysis Year: 2030
Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	10000	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2577	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	2.4	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.867	
Driver population factor, vp	0.95	
Flow rate, vp	3131	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3131	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Valencia to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2036	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2261	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2261	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	58.3	mi/h
Number of lanes, N	4	
Density, D	38.8	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	9800	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2526	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.901	
Driver population factor, vp	0.95	
Flow rate, vp	2951	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2951	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Magic Mountain to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7700	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1985	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2204	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2204	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	60.0	mi/h
Number of lanes, N	4	
Density, D	36.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:
Agency or Company: AFA
Date Performed: June 07
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 SB
From/To: Rye Canyon to Magic Mountain
Jurisdiction: Los Angeles/District 7
Analysis Year: 2030
Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	10100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2603	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2891	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2891	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Rye Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7700	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1985	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2204	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2204	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	60.0	mi/h
Number of lanes, N	4	
Density, D	36.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:
Agency or Company: AFA
Date Performed: June 07
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 SB
From/To: SR-126 to Rye Canyon
Jurisdiction: Los Angeles/District 7
Analysis Year: 2030
Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	9200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2371	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2633	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2633	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:
Agency or Company: AFA
Date Performed: June 07
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 NB
From/To: SR-126 to Hasley Canyon
Jurisdiction: Los Angeles/District 7
Analysis Year: 2030
Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	8700	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2242	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2490	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2490	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Hasley Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	9100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2345	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2605	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2605	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Hasley Canyon to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	8200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2113	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	2358	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2358	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	54.9	mi/h
Number of lanes, N	4	
Density, D	42.9	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Parker to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7600	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1959	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	2186	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2186	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	60.5	mi/h
Number of lanes, N	4	
Density, D	36.1	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Parker to Lake Hughes
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6800	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1753	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1983	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1983	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.2	mi/h
Number of lanes, N	4	
Density, D	30.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Lake Hughes to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6500	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1675	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1896	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1896	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.6	mi/h
Number of lanes, N	4	
Density, D	28.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX D (Cont.)
HIGHWAY CAPACITY MANUAL WORKSHEETS

i. 2030 Build Conditions – Constrained – AM Peak Hour

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 Ramp to SR14 Ramp
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	2750	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	709	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1044	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1044	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	14.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR14 Ramp to Balboa
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	3920	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1010	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.43	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1418	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1418	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	3	
Density, D	20.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	3130	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	807	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1132	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1132	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	16.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Truck Route Bypass to SR14
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	4240	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1093	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.30	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1150	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1150	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	16.4	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Truck Route Bypass to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	4760	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1227	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, vp	0.95	
Flow rate, vp	1304	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1304	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	18.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alt/Single Truck Lane (Const. Flow Model)

Flow Inputs and Adjustments

Volume, V	5500	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1418	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	1641	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1641	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.2	mi/h
Number of lanes, N	4	
Density, D	23.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alt/Dual Truck Lanes (Const. Flow Model)

Flow Inputs and Adjustments

Volume, V	5360	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1381	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1454	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1454	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	4	
Density, D	20.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Calgrove to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5740	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1479	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1635	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1635	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.2	mi/h
Number of lanes, N	4	
Density, D	23.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Pico to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5420	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1397	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, vp	0.95	
Flow rate, vp	1485	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1485	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	4	
Density, D	21.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Pico to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6080	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1567	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	1814	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1814	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.7	mi/h
Number of lanes, N	4	
Density, D	26.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	McBean to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6470	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1668	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1843	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1843	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.3	mi/h
Number of lanes, N	4	
Density, D	27.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	McBean to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6180	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1593	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1769	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1769	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.2	mi/h
Number of lanes, N	4	
Density, D	25.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Valencia to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6770	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1745	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	2.4	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.867	
Driver population factor, vp	0.95	
Flow rate, vp	1696	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	5	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1696	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.8	mi/h
Number of lanes, N	5	
Density, D	24.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Valencia to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5680	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1464	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1626	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1626	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.3	mi/h
Number of lanes, N	4	
Density, D	23.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5960	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1536	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.901	
Driver population factor, vp	0.95	
Flow rate, vp	1795	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1795	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.9	mi/h
Number of lanes, N	4	
Density, D	26.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Magic Mountain to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5690	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1466	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1629	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1629	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.3	mi/h
Number of lanes, N	4	
Density, D	23.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Rye Canyon to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5860	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1510	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1677	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1677	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.0	mi/h
Number of lanes, N	4	
Density, D	24.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Rye Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5690	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1466	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1629	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1629	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.3	mi/h
Number of lanes, N	4	
Density, D	23.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR-126 to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5660	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1459	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1620	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1620	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.3	mi/h
Number of lanes, N	4	
Density, D	23.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR-126 to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5860	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1510	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1677	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1677	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.0	mi/h
Number of lanes, N	4	
Density, D	24.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Hasley Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5290	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1363	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1514	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1514	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	4	
Density, D	21.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Hasley Canyon to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	3920	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1010	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1127	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1127	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	16.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:
Agency or Company: AFA
Date Performed: June 07
Analysis Time Period: AM Peak Hour
Freeway/Direction: I-5 SB
From/To: Parker to Hasley Canyon
Jurisdiction: Los Angeles/District 7
Analysis Year: 2030
Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5360	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1381	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1541	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1541	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.7	mi/h
Number of lanes, N	4	
Density, D	22.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Parker to Lake Hughes
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	4100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1057	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1196	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1196	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Lake Hughes to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1340	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1517	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1517	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	4	
Density, D	21.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX D (Cont.)
HIGHWAY CAPACITY MANUAL WORKSHEETS

j. 2030 Build Conditions – Constrained – PM Peak Hour

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 Ramp to SR14 Ramp
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	4140	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1067	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1498	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1498	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	3	
Density, D	21.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR14 Ramp to Balboa
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	4570	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1178	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1653	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1653	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.1	mi/h
Number of lanes, N	3	
Density, D	23.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	4900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1263	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1772	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1772	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.2	mi/h
Number of lanes, N	3	
Density, D	26.0+	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Truck Route Bypass to SR14
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	5360	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1381	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.30	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1454	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1454	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	4	
Density, D	20.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Truck Route Bypass to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1572	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, vp	0.95	
Flow rate, vp	1671	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1671	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.0	mi/h
Number of lanes, N	4	
Density, D	24.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alt/Single Truck Lane (Const. Flow Model)

Flow Inputs and Adjustments

Volume, V	6540	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1686	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	1952	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1952	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.7	mi/h
Number of lanes, N	4	
Density, D	29.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alt/Dual Truck Lanes (Const. Flow Model)

Flow Inputs and Adjustments

Volume, V	6380	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1644	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1731	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1731	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.5	mi/h
Number of lanes, N	4	
Density, D	25.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Calgrove to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6910	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1781	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1968	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1968	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.4	mi/h
Number of lanes, N	4	
Density, D	30.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Pico to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6610	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1704	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, vp	0.95	
Flow rate, vp	1811	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1811	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.7	mi/h
Number of lanes, N	4	
Density, D	26.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Pico to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6910	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1781	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	2062	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2062	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.6	mi/h
Number of lanes, N	4	
Density, D	32.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	McBean to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7680	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1979	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2188	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2188	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	4	
Density, D	36.2	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	McBean to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6720	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1732	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1923	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1923	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.2	mi/h
Number of lanes, N	4	
Density, D	29.0	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Valencia to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	8040	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2072	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	2.4	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.867	
Driver population factor, vp	0.95	
Flow rate, vp	2014	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	5	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2014	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.6	mi/h
Number of lanes, N	5	
Density, D	31.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Valencia to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6320	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1629	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1809	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1809	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.8	mi/h
Number of lanes, N	4	
Density, D	26.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7840	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2021	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.901	
Driver population factor, vp	0.95	
Flow rate, vp	2361	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2361	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	54.8	mi/h
Number of lanes, N	4	
Density, D	43.1	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: (714) 667-0496 Fax:
E-mail: mail@austinfoust.com

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alt/3+ Persons/Veh HOV (Const. Flow Model)

Flow Inputs and Adjustments

Volume, V	9212	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2374	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.901	
Driver population factor, fp	0.95	
Flow rate, vp	2774	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2774	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Magic Mountain to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6160	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1588	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1763	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1763	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.2	mi/h
Number of lanes, N	4	
Density, D	25.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Rye Canyon to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	8120	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2093	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2324	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2324	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	56.2	mi/h
Number of lanes, N	4	
Density, D	41.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Rye Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6160	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1588	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1763	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1763	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.2	mi/h
Number of lanes, N	4	
Density, D	25.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR-126 to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7360	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1897	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2107	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2107	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.6	mi/h
Number of lanes, N	4	
Density, D	33.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR-126 to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7130	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1838	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2041	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2041	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.0	mi/h
Number of lanes, N	4	
Density, D	31.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Hasley Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	7280	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1876	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2084	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2084	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.1	mi/h
Number of lanes, N	4	
Density, D	33.0	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Hasley Canyon to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6630	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1709	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1907	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1907	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.4	mi/h
Number of lanes, N	4	
Density, D	28.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Parker to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6080	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1567	v
Trucks and buses	12	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	0.95	
Flow rate, vp	1748	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1748	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.4	mi/h
Number of lanes, N	4	
Density, D	25.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Parker to Lake Hughes
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6800	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1753	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1983	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1983	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.2	mi/h
Number of lanes, N	4	
Density, D	30.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Lake Hughes to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Constrained Flow Model)

Flow Inputs and Adjustments

Volume, V	6500	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1675	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1896	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1896	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.6	mi/h
Number of lanes, N	4	
Density, D	28.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX D (Cont.)
HIGHWAY CAPACITY MANUAL WORKSHEETS

k. 2030 No-Build Conditions – Demand – AM Peak Hour

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 Ramp to SR14 Ramp
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	5480	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1412	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1982	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1982	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.2	mi/h
Number of lanes, N	3	
Density, D	30.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR14 Ramp to Balboa
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	6810	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1755	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.43	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	2463	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2463	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	6010	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1549	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	2174	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2174	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	60.8	mi/h
Number of lanes, N	3	
Density, D	35.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Truck Route Bypass to SR14
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7230	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1863	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.30	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1961	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1961	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.6	mi/h
Number of lanes, N	4	
Density, D	29.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Truck Route Bypass to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2294	v
Trucks and buses	9	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.957	
Driver population factor, vp	0.95	
Flow rate, vp	2523	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2523	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8928	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2301	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	3552	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3552	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Calgrove to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	9400	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2423	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2678	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2678	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Pico to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8740	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2253	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	3193	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3193	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Pico to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	9500	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2448	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	2835	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2835	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	McBean to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	9500	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2448	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2706	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2706	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	McBean to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	9100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2345	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2592	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2592	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Valencia to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	9600	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2474	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.870	
Driver population factor, vp	0.95	
Flow rate, vp	2995	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2995	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Valencia to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2113	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2336	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2336	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	55.7	mi/h
Number of lanes, N	4	
Density, D	41.9	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8600	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2216	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	2566	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2566	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Magic Mountain to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7300	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1881	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2089	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2089	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	4	
Density, D	33.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Rye Canyon to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8400	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2165	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2404	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2404	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Rye Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7300	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1881	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2089	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2089	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	4	
Density, D	33.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR-126 to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2036	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2261	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2261	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	58.3	mi/h
Number of lanes, N	4	
Density, D	38.8	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR-126 to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	6900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1778	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1975	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1975	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.3	mi/h
Number of lanes, N	4	
Density, D	30.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Hasley Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2036	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2261	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2261	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	58.3	mi/h
Number of lanes, N	4	
Density, D	38.8	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Hasley Canyon to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	5300	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1366	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	1531	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1531	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.7	mi/h
Number of lanes, N	4	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Parker to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1856	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	2080	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2080	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.2	mi/h
Number of lanes, N	4	
Density, D	32.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Parker to Lake Hughes
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	4400	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1134	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1283	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1283	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	18.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Lake Hughes to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	5700	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1469	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1662	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1662	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.1	mi/h
Number of lanes, N	4	
Density, D	24.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX D (Cont.)
HIGHWAY CAPACITY MANUAL WORKSHEETS

l. 2030 No-Build Conditions – Demand – PM Peak Hour

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 Ramp to SR14 Ramp
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030

Description: I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7590	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1956	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	2746	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2746	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR14 Ramp to Balboa
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8190	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2111	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.43	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	2963	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2963	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8620	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2222	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	3118	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3118	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Truck Route Bypass to SR14
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	9240	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2381	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.30	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	2507	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2507	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Truck Route Bypass to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	11000	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2835	v
Trucks and buses	9	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.957	
Driver population factor, vp	0.95	
Flow rate, vp	3119	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3119	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	10881	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2804	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, fp	0.95	
Flow rate, vp	4330	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	4330	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:
Agency or Company: AFA
Date Performed: June 07
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 NB
From/To: Calgrove to Pico
Jurisdiction: Los Angeles/District 7
Analysis Year: 2030
Description: I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	10900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2809	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	3105	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3105	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Pico to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	10948	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2822	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, fp	0.95	
Flow rate, vp	4000	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	4000	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Pico to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	10500	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2706	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	3133	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3133	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	McBean to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	12300	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	3170	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	3504	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3504	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	McBean to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	10300	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2655	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2934	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2934	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Valencia to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	13000	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	3351	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.870	
Driver population factor, vp	0.95	
Flow rate, vp	4056	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	4056	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:
Agency or Company: AFA
Date Performed: June 07
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 NB
From/To: Valencia to Magic Mountain
Jurisdiction: Los Angeles/District 7
Analysis Year: 2030
Description: I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	9500	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2448	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2706	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2706	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	12100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	3119	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	3611	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3611	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Magic Mountain to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2294	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2547	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2547	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Rye Canyon to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	12100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	3119	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	3463	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3463	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Rye Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8900	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2294	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2547	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2547	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR-126 to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	10300	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2655	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2948	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2948	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR-126 to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	9600	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2474	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2748	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2748	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:
Agency or Company: AFA
Date Performed: June 07
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 SB
From/To: Hasley Canyon to SR-126
Jurisdiction: Los Angeles/District 7
Analysis Year: 2030
Description: I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	9800	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2526	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2805	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2805	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Hasley Canyon to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	9100	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2345	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	2629	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2629	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Parker to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8300	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2139	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	2398	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2398	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	53.4	mi/h
Number of lanes, N	4	
Density, D	44.9	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Parker to Lake Hughes
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7600	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1959	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	2216	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2216	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	59.6	mi/h
Number of lanes, N	4	
Density, D	37.2	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Lake Hughes to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - No-Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1856	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	2100	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2100	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.7	mi/h
Number of lanes, N	4	
Density, D	33.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX D (Cont.)
HIGHWAY CAPACITY MANUAL WORKSHEETS

m. 2030 Build Conditions – Demand – AM Peak Hour

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 Ramp to SR14 Ramp
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	3830	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	987	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1385	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1385	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	3	
Density, D	19.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR14 Ramp to Balboa
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	5090	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1312	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.43	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1841	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1841	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.4	mi/h
Number of lanes, N	3	
Density, D	27.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	4360	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1124	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1577	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1577	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.5	mi/h
Number of lanes, N	3	
Density, D	22.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Truck Route Bypass to SR14
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	5510	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1420	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.30	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1495	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1495	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	4	
Density, D	21.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Truck Route Bypass to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	6620	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1706	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, vp	0.95	
Flow rate, vp	1814	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1814	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.7	mi/h
Number of lanes, N	4	
Density, D	26.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alt/Single Truck Lane (Demand Model)

Flow Inputs and Adjustments

Volume, V	7150	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1843	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	2134	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2134	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	61.9	mi/h
Number of lanes, N	4	
Density, D	34.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	6981	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1799	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1894	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1894	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.6	mi/h
Number of lanes, N	4	
Density, D	28.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Calgrove to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7790	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2008	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2219	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2219	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	59.6	mi/h
Number of lanes, N	4	
Density, D	37.3	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Pico to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7060	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1820	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, vp	0.95	
Flow rate, vp	1935	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1935	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.0	mi/h
Number of lanes, N	4	
Density, D	29.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Pico to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7880	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2031	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	2352	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2352	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	55.2	mi/h
Number of lanes, N	4	
Density, D	42.6	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	McBean to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7780	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2005	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2216	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2216	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	59.6	mi/h
Number of lanes, N	4	
Density, D	37.2	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	McBean to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7460	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1923	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2125	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2125	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.1	mi/h
Number of lanes, N	4	
Density, D	34.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Valencia to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7880	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2031	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.870	
Driver population factor, vp	0.95	
Flow rate, vp	1967	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	5	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1967	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.5	mi/h
Number of lanes, N	5	
Density, D	30.0	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Valencia to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	6560	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1691	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	1869	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1869	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	4	
Density, D	27.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	6880	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1773	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	2053	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2053	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.8	mi/h
Number of lanes, N	4	
Density, D	32.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Magic Mountain to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	5920	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1526	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1694	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1694	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.8	mi/h
Number of lanes, N	4	
Density, D	24.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Rye Canyon to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	6980	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1799	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1998	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1998	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	4	
Density, D	30.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Rye Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	5920	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1526	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1694	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1694	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.8	mi/h
Number of lanes, N	4	
Density, D	24.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR-126 to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	6460	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1665	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1849	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1849	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.3	mi/h
Number of lanes, N	4	
Density, D	27.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR-126 to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	5520	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1423	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1580	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1580	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.5	mi/h
Number of lanes, N	4	
Density, D	22.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Hasley Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	6460	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1665	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	1849	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1849	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.3	mi/h
Number of lanes, N	4	
Density, D	27.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Hasley Canyon to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	4240	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1093	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	1225	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1225	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	17.5	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Parker to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	5760	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1485	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	1664	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1664	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.1	mi/h
Number of lanes, N	4	
Density, D	24.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Parker to Lake Hughes
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	4400	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1134	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1283	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1283	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	18.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Lake Hughes to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	5700	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1469	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	1662	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1662	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.1	mi/h
Number of lanes, N	4	
Density, D	24.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX D (Cont.)
HIGHWAY CAPACITY MANUAL WORKSHEETS

n. 2030 Build Conditions – Demand – PM Peak Hour

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 Ramp to SR14 Ramp
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	5550	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1430	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.43	%
Segment length	0.59	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	2008	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2008	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.7	mi/h
Number of lanes, N	3	
Density, D	31.0	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR14 Ramp to Balboa
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	6070	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1564	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.43	%
Segment length	0.64	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	2196	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2196	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	60.2	mi/h
Number of lanes, N	3	
Density, D	36.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR14 to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	6580	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1696	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	4.53	%
Segment length	0.51	mi
Trucks and buses PCE, ET	3.5	
Recreational vehicle PCE, ER	4.5	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	2380	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2380	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	54.1	mi/h
Number of lanes, N	3	
Density, D	44.0	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Truck Route Bypass to SR14
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7120	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1835	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-4.53	%
Segment length	0.30	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	1932	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1932	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.1	mi/h
Number of lanes, N	4	
Density, D	29.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Truck Route Bypass to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8180	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2108	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, vp	0.95	
Flow rate, vp	2241	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2241	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	58.9	mi/h
Number of lanes, N	4	
Density, D	38.1	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alt/Single Truck Lane (Demand Model)

Flow Inputs and Adjustments

Volume, V	8690	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2240	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	2593	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2593	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Calgrove to Truck Route Bypass
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8480	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2186	v
Trucks and buses	0	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	5.10	%
Segment length	3.50	mi
Trucks and buses PCE, ET	6.0	
Recreational vehicle PCE, ER	6.0	
Heavy vehicle adjustment, fHV	1.000	
Driver population factor, vp	0.95	
Flow rate, vp	2301	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2301	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	57.0	mi/h
Number of lanes, N	4	
Density, D	40.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Calgrove to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8910	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2296	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2538	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2538	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Pico to Calgrove
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8870	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2286	v
Trucks and buses	2	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.990	
Driver population factor, vp	0.95	
Flow rate, vp	2430	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2430	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Pico to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8510	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2193	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	2540	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2540	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	McBean to Pico
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	10180	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2624	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.50	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2900	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2900	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:
Agency or Company: AFA
Date Performed: June 07
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 NB
From/To: McBean to Valencia
Jurisdiction: Los Angeles/District 7
Analysis Year: 2030
Description: I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	8400	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2165	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2393	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2393	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	53.6	mi/h
Number of lanes, N	4	
Density, D	44.6	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Valencia to McBean
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	10880	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2804	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.70	%
Segment length	1.00	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.870	
Driver population factor, vp	0.95	
Flow rate, vp	2716	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	5	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	0.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2716	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	5	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Valencia to Magic Mountain
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7600	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1959	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, vp	0.95	
Flow rate, vp	2165	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2165	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	61.1	mi/h
Number of lanes, N	4	
Density, D	35.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Magic Mountain to Valencia
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	10040	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2588	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	2.80	%
Segment length	1.10	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.909	
Driver population factor, vp	0.95	
Flow rate, vp	2996	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2996	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Magic Mountain to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7120	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1835	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2038	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2038	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.1	mi/h
Number of lanes, N	4	
Density, D	31.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:
Agency or Company: AFA
Date Performed: June 07
Analysis Time Period: PM Peak Hour
Freeway/Direction: I-5 SB
From/To: Rye Canyon to Magic Mountain
Jurisdiction: Los Angeles/District 7
Analysis Year: 2030
Description: I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	10040	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2588	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2874	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2874	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS		

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Rye Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7120	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1835	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2038	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2038	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.1	mi/h
Number of lanes, N	4	
Density, D	31.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	SR-126 to Rye Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7840	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2021	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2244	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2244	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	58.8	mi/h
Number of lanes, N	4	
Density, D	38.2	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	SR-126 to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7120	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1835	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2038	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2038	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.1	mi/h
Number of lanes, N	4	
Density, D	31.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Hasley Canyon to SR-126
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7840	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	2021	v
Trucks and buses	11	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.948	
Driver population factor, vp	0.95	
Flow rate, vp	2244	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2244	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	58.8	mi/h
Number of lanes, N	4	
Density, D	38.2	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Hasley Canyon to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7320	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1887	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	2115	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2115	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	4	
Density, D	33.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Parker to Hasley Canyon
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	6640	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1711	v
Trucks and buses	13	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	-1.00	%
Segment length	2.40	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.939	
Driver population factor, vp	0.95	
Flow rate, vp	1919	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1919	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	66.3	mi/h
Number of lanes, N	4	
Density, D	29.0	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 NB
From/To:	Parker to Lake Hughes
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7600	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1959	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	2216	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2216	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	59.6	mi/h
Number of lanes, N	4	
Density, D	37.2	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1

Austin-Foust Associates, Inc.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency or Company:	AFA
Date Performed:	June 07
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-5 SB
From/To:	Lake Hughes to Parker
Jurisdiction:	Los Angeles/District 7
Analysis Year:	2030
Description:	I-5 PA&ED - Build Alternative (Demand Model)

Flow Inputs and Adjustments

Volume, V	7200	veh/h
Peak-hour factor, PHF	0.97	
Peak 15-min volume, v15	1856	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	3.60	%
Segment length	1.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	0.95	
Flow rate, vp	2100	pc/h

Speed Inputs and Adjustments

Lane width	12.0	m
Right-shoulder lateral clearance	6.0	m
Interchange density	0.50	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2100	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.7	mi/h
Number of lanes, N	4	
Density, D	33.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.