

## **APPENDIX B: TRAFFIC DATA**

**2006 AVERAGE DAILY TRAFFIC COUNTS**

US 301  
 0.20 Miles North of the Nice Bridge  
 Non-Summer Weekday  
 Existing (2006)

Begin Hour	Northbound	Southbound
12:00 AM	57	73
1:00 AM	55	36
2:00 AM	58	38
3:00 AM	79	37
4:00 AM	320	64
5:00 AM	486	180
6:00 AM	592	411
7:00 AM	549	565
8:00 AM	494	517
9:00 AM	404	455
10:00 AM	406	447
11:00 AM	416	403
12:00 PM	401	386
1:00 PM	410	450
2:00 PM	490	492
3:00 PM	674	649
4:00 PM	740	845
5:00 PM	624	750
6:00 PM	472	547
7:00 PM	320	372
8:00 PM	235	296
9:00 PM	180	171
10:00 PM	131	143
11:00 PM	77	103
12:00 AM	57	73
Total	8670	8430

Existing ADT                      17100

US 301

South of VA 218

Summer Weekend Day - Saturday

Existing (2006)

Begin Hour	Northbound	Southbound
12:00 AM	126	153
1:00 AM	86	98
2:00 AM	61	78
3:00 AM	61	81
4:00 AM	72	118
5:00 AM	89	203
6:00 AM	146	368
7:00 AM	211	569
8:00 AM	315	732
9:00 AM	442	860
10:00 AM	574	908
11:00 AM	675	869
12:00 PM	710	789
1:00 PM	748	739
2:00 PM	761	691
3:00 PM	790	653
4:00 PM	809	616
5:00 PM	750	532
6:00 PM	615	430
7:00 PM	527	360
8:00 PM	462	319
9:00 PM	407	265
10:00 PM	334	199
11:00 PM	253	146
12:00 AM	126	153
Total	10024	10776

Existing ADT                      20800

US 301  
 South of VA 218  
 Summer Weekend Day - Sunday  
 Existing (2006)

Begin Hour	Northbound	Southbound
12:00 AM	141	106
1:00 AM	88	60
2:00 AM	55	43
3:00 AM	37	35
4:00 AM	35	42
5:00 AM	49	71
6:00 AM	82	135
7:00 AM	139	232
8:00 AM	222	341
9:00 AM	360	492
10:00 AM	491	628
11:00 AM	642	632
12:00 PM	821	645
1:00 PM	914	631
2:00 PM	936	634
3:00 PM	968	640
4:00 PM	1028	580
5:00 PM	1011	576
6:00 PM	970	523
7:00 PM	851	426
8:00 PM	705	391
9:00 PM	562	272
10:00 PM	369	180
11:00 PM	198	111
12:00 AM	141	106
Total	11674	8426

Existing ADT                      20100

- **2006 Summer Weekend (7:00 AM to 6:00 PM)**
- **2006 Average Weekday (7:00 AM to 6:00 PM)**

- **2006 Summer Weekend (7:00 AM to 6:00 PM)**

HCS2000: Two-Lane Highways Release 4.1d

Phone: Fax:  
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Two-Way Two-Lane Highway Segment Analysis

Analyst Kostli Jain  
Agency/Co. Sabra, Wang & Associates, Inc.  
Date Performed 10/30/2006  
Analysis Time Period 7:00 AM - 8:00 AM  
Highway US 301  
From/To  
Jurisdiction  
Analysis Year 2006 (Weekend Day)  
Description

Input Data

Highway class	Class 1				
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	7	%
Segment length	0.0	mi	% Recreational vehicles	2	%
Terrain type	Rolling		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			
Two-way hourly volume, V	576	veh/h			
Directional split	53 / 47	%			

Average Travel Speed

Grade adjustment factor, fG	0.93	
PCE for trucks, ET	1.9	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.939	
Two-way flow rate,(note-1) vp	717	pc/h
Highest directional split proportion (note-2)	380	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	3.4	mi/h
Average travel speed, ATS	46.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	0.94	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.966	
Two-way flow rate,(note-1) vp	689	pc/h
Highest directional split proportion (note-2)	365	
Base percent time-spent-following, BPTSF	45.4	%
Adj.for directional distribution and no-passing zones, fd/np	18.1	
Percent time-spent-following, PTSF	63.6	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.22	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.

2. If highest directional split  $vp \geq 1700$  pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

Analyst Kostil Jain  
Agency/Co. Sabra, Wang & Associates, Inc.  
Date Performed 10/30/2006  
Analysis Time Period 8:00 AM - 9:00 AM  
Highway US 301  
From/To  
Jurisdiction  
Analysis Year 2006 (Weekend Day)  
Description

Input Data

Highway class	Class 1				
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	7	%
Segment length	0.0	mi	% Recreational vehicles	2	%
Terrain type	Rolling		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			
Two-way hourly volume, V	805	veh/h			
Directional split	53 / 47	%			

Average Travel Speed

Grade adjustment factor, fG	0.93	
PCE for trucks, ET	1.9	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.939	
Two-way flow rate, (note-1) vp	1002	pc/h
Highest directional split proportion (note-2)	531	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	2.6	mi/h
Average travel speed, ATS	45.2	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	0.94	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.966	
Two-way flow rate, (note-1) vp	963	pc/h
Highest directional split proportion (note-2)	510	
Base percent time-spent-following, BPTSF	57.1	%
Adj. for directional distribution and no-passing zones, fd/np	13.2	
Percent time-spent-following, PTSF	70.3	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.31	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h



Level of service, LOS	D	
Volume to capacity ratio, v/c	0.38	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	10:00 AM - 11:00 AM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekend Day)
Description	

Input Data

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	1301	veh/h		
Directional split	53 / 47	%		

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate, (note-1) vp	1481	pc/h
Highest directional split proportion (note-2)	785	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	1.6	mi/h
Average travel speed, ATS	42.4	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate, (note-1) vp	1414	pc/h
Highest directional split proportion (note-2)	749	
Base percent time-spent-following, BPTSF	71.1	%

Adj.for directional distribution and no-passing zones, fd/np 7.9  
 Percent time-spent-following, PTSF 79.0 %

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.46	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	11:00 AM - 12:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekend Day)
Description	

Input Data

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	1409	veh/h		
Directional split	53 / 47	%		

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate,(note-1) vp	1604	pc/h
Highest directional split proportion (note-2)	850	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	1.5	mi/h
Average travel speed, ATS	41.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00
PCE for trucks, ET	1.0
PCE for RVs, ER	1.0

Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1532	pc/h
Highest directional split proportion (note-2)	812	
Base percent time-spent-following, BPTSF	74.0	%
Adj.for directional distribution and no-passing zones, fd/np	7.2	
Percent time-spent-following, PTSF	81.2	%

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Level of Service and Other Performance Measures

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Level of service, LOS	E	
Volume to capacity ratio, v/c	0.50	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	12:00 PM - 1:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekend Day)
Description	

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Input Data

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Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	1483	veh/h		
Directional split	53 / 47	%		

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Average Travel Speed

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate,(note-1) vp	1688	pc/h
Highest directional split proportion (note-2)	895	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	1.4	mi/h
Average travel speed, ATS	41.0	mi/h

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Percent Time-Spent-Following

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Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1612	pc/h
Highest directional split proportion (note-2)	854	
Base percent time-spent-following, BPTSF	75.8	%
Adj.for directional distribution and no-passing zones, fd/np	6.7	
Percent time-spent-following, PTSF	82.4	%

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Level of Service and Other Performance Measures

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Level of service, LOS	E	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	1:00 PM - 2:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekend Day)
Description	

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Input Data

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Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	1516	veh/h		
Directional split	53 / 47	%		

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Average Travel Speed

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate,(note-1) vp	1726	pc/h
Highest directional split proportion (note-2)	915	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h

Adjustment for no-passing zones, fnp	1.4	mi/h
Average travel speed, ATS	40.8	mi/h

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Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1648	pc/h
Highest directional split proportion (note-2)	873	
Base percent time-spent-following, BPTSF	76.5	%
Adj.for directional distribution and no-passing zones, fd/np	6.5	
Percent time-spent-following, PTSF	83.0	%

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Level of Service and Other Performance Measures

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Level of service, LOS	E	
Volume to capacity ratio, v/c	0.54	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	2:00 PM - 3:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekend Day)
Description	

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Input Data

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Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	1511	veh/h		
Directional split	53 / 47	%		

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Average Travel Speed

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate,(note-1) vp	1720	pc/h
Highest directional split proportion (note-2)	912	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h

Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	1.4	mi/h
Average travel speed, ATS	40.8	mi/h

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Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1642	pc/h
Highest directional split proportion (note-2)	870	
Base percent time-spent-following, BPTSF	76.4	%
Adj.for directional distribution and no-passing zones, fd/np	6.5	
Percent time-spent-following, PTSF	82.9	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.54	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	3:00 PM - 4:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekend Day)
Description	

Input Data

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	1526	veh/h		
Directional split	53 / 47	%		

Average Travel Speed

Grade adjustment factor, fG	0.99
PCE for trucks, ET	1.5
PCE for RVs, ER	1.1
Heavy-vehicle adjustment factor,	0.964
Two-way flow rate,(note-1) vp	1737 pc/h
Highest directional split proportion (note-2)	921 pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	1.4	mi/h
Average travel speed, ATS	40.7	mi/h

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Percent Time-Spent-Following

Grade adjustment factor, fG	1.00
PCE for trucks, ET	1.0
PCE for RVs, ER	1.0
Heavy-vehicle adjustment factor, fHV	1.000
Two-way flow rate,(note-1) vp	1659 pc/h
Highest directional split proportion (note-2)	879
Base percent time-spent-following, BPTSF	76.7 %
Adj.for directional distribution and no-passing zones, fd/np	6.4
Percent time-spent-following, PTSF	83.1 %

Level of Service and Other Performance Measures

Level of service, LOS	E
Volume to capacity ratio, v/c	0.54
Peak 15-min vehicle-miles of travel, VMT15	0 veh-mi
Peak-hour vehicle-miles of travel, VMT60	0 veh-mi
Peak 15-min total travel time, TT15	0.0 veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	4:00 PM - 5:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekend)
Description	

Input Data

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	1517	veh/h		
Directional split	53 / 47	%		

Average Travel Speed

Grade adjustment factor, fG	0.99
PCE for trucks, ET	1.5
PCE for RVs, ER	1.1
Heavy-vehicle adjustment factor,	0.964

Two-way flow rate,(note-1) vp	1727	pc/h
Highest directional split proportion (note-2)	915	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	1.4	mi/h
Average travel speed, ATS	40.8	mi/h

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Percent Time-Spent-Following		
Grade adjustment factor, fG		1.00
PCE for trucks, ET		1.0
PCE for RVs, ER		1.0
Heavy-vehicle adjustment factor, fHV		1.000
Two-way flow rate,(note-1) vp	1649	pc/h
Highest directional split proportion (note-2)	874	
Base percent time-spent-following, BPTSF	76.5	%
Adj.for directional distribution and no-passing zones, fd/np	6.5	
Percent time-spent-following, PTSF	83.0	%

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Level of Service and Other Performance Measures		
Level of service, LOS		E
Volume to capacity ratio, v/c		0.54
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

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- Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
  2. If highest directional split vp >= 1700 pc/h, terminate

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain		
Agency/Co.	Sabra, Wang & Associates, Inc.		
Date Performed	10/30/2006		
Analysis Time Period	5:00 PM - 6:00 PM		
Highway	US 301		
From/To			
Jurisdiction			
Analysis Year	2006 (Weekend Day)		
Description			

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Input Data

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Highway class	Class 1				
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	7	%
Segment length	0.0	mi	% Recreational vehicles	2	%
Terrain type	Rolling		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			
Two-way hourly volume, V	1435	veh/h			
Directional split	53 / 47	%			

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Average Travel Speed

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate,(note-1) vp	1634	pc/h
Highest directional split proportion (note-2)	866	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp	1.5	mi/h
Average travel speed, ATS	41.4	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1560	pc/h
Highest directional split proportion (note-2)	827	
Base percent time-spent-following, BPTSF	74.6	%
Adj.for directional distribution and no-passing zones, fd/np	7.0	
Percent time-spent-following, PTSF	81.6	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.51	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	6:00 PM - 7:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekend Day)
Description	

Input Data

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		

Two-way hourly volume, V	1269	veh/h
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Directional split            53 / 47 %

Average Travel Speed

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate,(note-1) vp	1445	pc/h
Highest directional split proportion (note-2)	766	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp	1.7	mi/h
Average travel speed, ATS	42.7	mi/h

Percent Time-Spent-Following

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Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1379	pc/h
Highest directional split proportion (note-2)	731	
Base percent time-spent-following, BPTSF	70.2	%
Adj.for directional distribution and no-passing zones, fd/np	8.2	
Percent time-spent-following, PTSF	78.5	%

Level of Service and Other Performance Measures

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Level of service, LOS	D	
Volume to capacity ratio, v/c	0.45	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

- **2006 Average Weekday (7:00 AM to 6:00 PM)**

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Two-Way Two-Lane Highway Segment Analysis

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Analyst                   Kosti Jain  
Agency/Co.               Sabra, Wang & Associates, Inc.  
Date Performed           10/30/2006  
Analysis Time Period     7:00 AM - 8:00 AM  
Highway                   US 301  
From/To  
Jurisdiction  
Analysis Year             2006 (Weekday)  
Description

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Input Data

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Highway class   Class 1  
Shoulder width   0.0   ft   Peak-hour factor, PHF   0.92  
Lane width       12.0   ft   % Trucks and buses     13    %  
Segment length   0.0   mi   % Recreational vehicles   2    %  
Terrain type     Rolling   % No-passing zones     100   %  
Grade: Length    mi   Access points/mi       1    /mi  
      Up/down        %  
  
Two-way hourly volume, V   1114   veh/h  
Directional split   50 / 50   %

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Average Travel Speed

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Grade adjustment factor, fG                   0.99  
PCE for trucks, ET                           1.5  
PCE for RVs, ER                               1.1  
Heavy-vehicle adjustment factor,            0.937  
Two-way flow rate,(note-1) vp               1305   pc/h  
Highest directional split proportion (note-2) 653   pc/h  
  
Free-Flow Speed from Field Measurement:  
Field measured speed, SFM                   -   mi/h  
Observed volume, Vf                         -   veh/h  
Estimated Free-Flow Speed:  
Base free-flow speed, BFFS                   60.0   mi/h  
Adj. for lane and shoulder width, fLS       4.2   mi/h  
Adj. for access points, fA                   0.3   mi/h  
  
Free-flow speed, FFS                         55.5   mi/h  
  
Adjustment for no-passing zones, fnp         1.9   mi/h  
Average travel speed, ATS                   43.5   mi/h

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Percent Time-Spent-Following

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Grade adjustment factor, fG                   1.00  
PCE for trucks, ET                           1.0  
PCE for RVs, ER                               1.0  
Heavy-vehicle adjustment factor, fHV         1.000  
Two-way flow rate,(note-1) vp               1211   pc/h  
Highest directional split proportion (note-2) 606  
Base percent time-spent-following, BPTSF   65.5   %  
Adj.for directional distribution and no-passing zones, fd/np 10.3  
Percent time-spent-following, PTSF         75.8   %

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Level of Service and Other Performance Measures

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Level of service, LOS                         D  
Volume to capacity ratio, v/c               0.41  
Peak 15-min vehicle-miles of travel, VMT15   0   veh-mi  
Peak-hour vehicle-miles of travel, VMT60    0   veh-mi  
Peak 15-min total travel time, TT15         0.0   veh-h

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## Notes:

1. If  $vp \geq 3200$  pc/h, terminate analysis-the LOS is F.
2. If highest directional split  $vp \geq 1700$  pc/h, terminate analysis-the LOS is F.

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 Two-Way Two-Lane Highway Segment Analysis
 

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	8:00 AM - 9:00 AM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekday)
Description	

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 Input Data
 

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Highway class	Class 1				
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	13	%
Segment length	0.0	mi	% Recreational vehicles	2	%
Terrain type	Rolling		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			
Two-way hourly volume, V	1011	veh/h			
Directional split	50 / 50	%			

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 Average Travel Speed
 

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.937	
Two-way flow rate,(note-1) vp	1184	pc/h
Highest directional split proportion (note-2)	592	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	2.1	mi/h
Average travel speed, ATS	44.2	mi/h

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 Percent Time-Spent-Following
 

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Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1099	pc/h
Highest directional split proportion (note-2)	550	
Base percent time-spent-following, BPTSF	61.9	%
Adj.for directional distribution and no-passing zones, fd/np	11.7	
Percent time-spent-following, PTSF	73.6	%

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 Level of Service and Other Performance Measures
 

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Level of service, LOS	D	
Volume to capacity ratio, v/c	0.37	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi

Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	9:00 AM - 10:00 AM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekday)
Description	

Input Data

Highway class	Class 1				
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	13	%
Segment length	0.0	mi	% Recreational vehicles	2	%
Terrain type	Rolling		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			
Two-way hourly volume, V	859	veh/h			
Directional split	50 / 50	%			

Average Travel Speed

Grade adjustment factor, fG	0.93	
PCE for trucks, ET	1.9	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.894	
Two-way flow rate,(note-1) vp	1123	pc/h
Highest directional split proportion (note-2)	562	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	2.3	mi/h
Average travel speed, ATS	44.5	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	0.94	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.939	
Two-way flow rate,(note-1) vp	1058	pc/h
Highest directional split proportion (note-2)	529	
Base percent time-spent-following, BPTSF	60.5	%
Adj.for directional distribution and no-passing zones, fd/np	12.2	
Percent time-spent-following, PTSF	72.7	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.35	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If  $vp \geq 3200$  pc/h, terminate analysis-the LOS is F.
2. If highest directional split  $vp \geq 1700$  pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	10:00 AM - 11:00 AM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekday)
Description	

Input Data

Highway class	Class 1				
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	13	%
Segment length	0.0	mi	% Recreational vehicles	2	%
Terrain type	Rolling		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			
Two-way hourly volume, V	853	veh/h			
Directional split	50 / 50	%			

Average Travel Speed

Grade adjustment factor, fG	0.93	
PCE for trucks, ET	1.9	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.894	
Two-way flow rate, (note-1) vp	1116	pc/h
Highest directional split proportion (note-2)	558	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	2.3	mi/h
Average travel speed, ATS	44.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	0.94	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.939	
Two-way flow rate, (note-1) vp	1050	pc/h
Highest directional split proportion (note-2)	525	
Base percent time-spent-following, BPTSF	60.3	%

Adj.for directional distribution and no-passing zones, fd/np 12.3  
 Percent time-spent-following, PTSF 72.5 %

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.35	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	11:00 AM - 12:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekday)
Description	

Input Data

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	13 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	819	veh/h		
Directional split	50 / 50	%		

Average Travel Speed

Grade adjustment factor, fG	0.93	
PCE for trucks, ET	1.9	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.894	
Two-way flow rate,(note-1) vp	1071	pc/h
Highest directional split proportion (note-2)	536	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	2.4	mi/h
Average travel speed, ATS	44.8	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	0.94
PCE for trucks, ET	1.5
PCE for RVs, ER	1.0

Heavy-vehicle adjustment factor, fHV	0.939	
Two-way flow rate,(note-1) vp	1009	pc/h
Highest directional split proportion (note-2)	505	
Base percent time-spent-following, BPTSF	58.8	%
Adj.for directional distribution and no-passing zones, fd/np	12.8	
Percent time-spent-following, PTSF	71.6	%

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Level of Service and Other Performance Measures

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Level of service, LOS	D	
Volume to capacity ratio, v/c	0.33	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	12:00 PM - 1:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekday)
Description	

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Input Data

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Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	13 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	787	veh/h		
Directional split	50 / 50	%		

---

Average Travel Speed

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Grade adjustment factor, fG	0.93	
PCE for trucks, ET	1.9	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.894	
Two-way flow rate,(note-1) vp	1029	pc/h
Highest directional split proportion (note-2)	515	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	2.5	mi/h
Average travel speed, ATS	45.0	mi/h

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Percent Time-Spent-Following

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Grade adjustment factor, fG	0.94	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.939	
Two-way flow rate,(note-1) vp	969	pc/h
Highest directional split proportion (note-2)	485	
Base percent time-spent-following, BPTSF	57.3	%
Adj.for directional distribution and no-passing zones, fd/np	13.3	
Percent time-spent-following, PTSF	70.6	%

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Level of Service and Other Performance Measures

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Level of service, LOS	D	
Volume to capacity ratio, v/c	0.32	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
E-Mail: \_\_\_\_\_

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	1:00 PM - 2:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekday)
Description	

---

Input Data

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Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	13 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	860	veh/h		
Directional split	50 / 50	%		

---

Average Travel Speed

---

Grade adjustment factor, fG	0.93	
PCE for trucks, ET	1.9	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.894	
Two-way flow rate,(note-1) vp	1125	pc/h
Highest directional split proportion (note-2)	563	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h

Adjustment for no-passing zones, fnp	2.3	mi/h
Average travel speed, ATS	44.5	mi/h

---

Percent Time-Spent-Following

Grade adjustment factor, fG	0.94	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.939	
Two-way flow rate,(note-1) vp	1059	pc/h
Highest directional split proportion (note-2)	530	
Base percent time-spent-following, BPTSF	60.6	%
Adj.for directional distribution and no-passing zones, fd/np	12.2	
Percent time-spent-following, PTSF	72.7	%

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Level of Service and Other Performance Measures

---

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.35	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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 E-Mail: \_\_\_\_\_

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	2:00 PM - 3:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekday)
Description	

---

Input Data

---

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	13 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	982	veh/h		
Directional split	50 / 50	%		

---

Average Travel Speed

---

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.937	
Two-way flow rate,(note-1) vp	1150	pc/h
Highest directional split proportion (note-2)	575	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h

Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	2.2	mi/h
Average travel speed, ATS	44.4	mi/h

---

Percent Time-Spent-Following		
Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1067	pc/h
Highest directional split proportion (note-2)	534	
Base percent time-spent-following, BPTSF	60.9	%
Adj.for directional distribution and no-passing zones, fd/np	12.1	
Percent time-spent-following, PTSF	72.9	%

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Level of Service and Other Performance Measures

---

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.36	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

---

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	3:00 PM - 4:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekday)
Description	

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Input Data

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Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	13 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	1323	veh/h		
Directional split	50 / 50	%		

---

Average Travel Speed

---

Grade adjustment factor, fG	0.99
PCE for trucks, ET	1.5
PCE for RVs, ER	1.1
Heavy-vehicle adjustment factor,	0.937
Two-way flow rate,(note-1) vp	1550 pc/h
Highest directional split proportion (note-2)	775 pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp	1.5	mi/h
Average travel speed, ATS	42.0	mi/h

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Percent Time-Spent-Following

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Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1438	pc/h
Highest directional split proportion (note-2)	719	
Base percent time-spent-following, BPTSF	71.7	%
Adj.for directional distribution and no-passing zones, fd/np	7.7	
Percent time-spent-following, PTSF	79.4	%

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Level of Service and Other Performance Measures

---

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.48	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	4:00 PM - 5:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekday)
Description	

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Input Data

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Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	13 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	1585	veh/h		
Directional split	50 / 50	%		

---

Average Travel Speed

---

Grade adjustment factor, fG	0.99
PCE for trucks, ET	1.5
PCE for RVs, ER	1.1
Heavy-vehicle adjustment factor,	0.937

Two-way flow rate,(note-1) vp	1857	pc/h
Highest directional split proportion (note-2)	929	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp	1.2	mi/h
Average travel speed, ATS	39.9	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00
PCE for trucks, ET	1.0
PCE for RVs, ER	1.0
Heavy-vehicle adjustment factor, fHV	1.000
Two-way flow rate,(note-1) vp	1723 pc/h
Highest directional split proportion (note-2)	862
Base percent time-spent-following, BPTSF	78.0 %
Adj.for directional distribution and no-passing zones, fd/np	6.0
Percent time-spent-following, PTSF	84.0 %

Level of Service and Other Performance Measures

Level of service, LOS	E
Volume to capacity ratio, v/c	0.58
Peak 15-min vehicle-miles of travel, VMT15	0 veh-mi
Peak-hour vehicle-miles of travel, VMT60	0 veh-mi
Peak 15-min total travel time, TT15	0.0 veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	5:00 PM - 6:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekday)
Description	

Input Data

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	13 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	1374	veh/h		
Directional split	50 / 50	%		

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.937	
Two-way flow rate,(note-1) vp	1610	pc/h
Highest directional split proportion (note-2)	805	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp	1.5	mi/h
Average travel speed, ATS	41.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1493	pc/h
Highest directional split proportion (note-2)	747	
Base percent time-spent-following, BPTSF	73.1	%
Adj.for directional distribution and no-passing zones, fd/np	7.4	
Percent time-spent-following, PTSF	80.4	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.50	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

Phone: Fax:  
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	6:00 PM - 7:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2006 (Weekday)
Description	

Input Data

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	13 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		

Two-way hourly volume, V	1019	veh/h
--------------------------	------	-------

Directional split            50 /   50 %

Average Travel Speed

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.937	
Two-way flow rate,(note-1) vp	1194	pc/h
Highest directional split proportion (note-2)	597	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp	2.1	mi/h
Average travel speed, ATS	44.2	mi/h

Percent Time-Spent-Following

---

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1108	pc/h
Highest directional split proportion (note-2)	554	
Base percent time-spent-following, BPTSF	62.2	%
Adj.for directional distribution and no-passing zones, fd/np	11.6	
Percent time-spent-following, PTSF	73.8	%

Level of Service and Other Performance Measures

---

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.37	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

---

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

**2030 NO-BUILD AVERAGE DAILY TRAFFIC PROJECTIONS**

US 301  
 On the Nice Bridge  
 Non-Summer Weekday  
 No Build 2030

Begin Hour	Northbound	Southbound
12:00 AM	116	150
1:00 AM	112	74
2:00 AM	119	78
3:00 AM	162	76
4:00 AM	655	131
5:00 AM	995	369
6:00 AM	1212	841
7:00 AM	1124	1157
8:00 AM	1010	1058
9:00 AM	827	931
10:00 AM	831	915
11:00 AM	851	824
12:00 PM	820	790
1:00 PM	839	921
2:00 PM	1003	1007
3:00 PM	1380	1328
4:00 PM	1515	1729
5:00 PM	1277	1535
6:00 PM	966	1120
7:00 PM	655	761
8:00 PM	481	606
9:00 PM	369	350
10:00 PM	268	293
11:00 PM	158	211
12:00 AM	116	150
Total	17745	17255

No Build ADT                      35000

US 301  
 On the Nice Bridge  
 Summer Weekend Day - Saturday  
 No Build 2030

Begin Hour	Northbound	Southbound
12:00 AM	258	313
1:00 AM	176	200
2:00 AM	124	160
3:00 AM	124	166
4:00 AM	148	242
5:00 AM	182	415
6:00 AM	299	754
7:00 AM	432	1166
8:00 AM	645	1499
9:00 AM	905	1762
10:00 AM	1176	1859
11:00 AM	1382	1779
12:00 PM	1454	1616
1:00 PM	1532	1513
2:00 PM	1558	1415
3:00 PM	1617	1338
4:00 PM	1657	1263
5:00 PM	1537	1090
6:00 PM	1259	881
7:00 PM	1079	738
8:00 PM	947	654
9:00 PM	834	542
10:00 PM	685	408
11:00 PM	518	299
12:00 AM	258	313
Total	20528	22072

No Build ADT                      42600

US 301  
 On the Nice Bridge  
 Summer Weekend Day - Sunday  
 No Build 2030

Begin Hour	Northbound	Southbound
12:00 AM	289	217
1:00 AM	180	123
2:00 AM	112	88
3:00 AM	76	72
4:00 AM	72	86
5:00 AM	100	145
6:00 AM	168	276
7:00 AM	285	473
8:00 AM	454	697
9:00 AM	736	1006
10:00 AM	1004	1284
11:00 AM	1313	1292
12:00 PM	1679	1319
1:00 PM	1868	1291
2:00 PM	1914	1296
3:00 PM	1979	1309
4:00 PM	2102	1186
5:00 PM	2067	1178
6:00 PM	1983	1069
7:00 PM	1740	871
8:00 PM	1442	799
9:00 PM	1149	557
10:00 PM	754	369
11:00 PM	404	227
12:00 AM	289	217
Total	23870	17230

No Build ADT                      41100

## **2030 NO-BUILD OPERATIONAL ANALYSIS**

- **2030 Summer Weekend**
- **2030 Average Weekday**

- **2030 Summer Weekend**

Phone:  
E-Mail:

Fax:

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Two-Way Two-Lane Highway Segment Analysis

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Analyst                   Kosti Jain  
Agency/Co.               Sabra, Wang & Associates, Inc.  
Date Performed           10/30/2006  
Analysis Time Period     7:00 AM - 8:00 AM  
Highway                   US 301  
From/To  
Jurisdiction  
Analysis Year             2030 (Weekend Day)  
Description

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Input Data

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Highway class   Class 1  
Shoulder width   0.0   ft    Peak-hour factor, PHF    0.92  
Lane width       12.0   ft    % Trucks and buses       7       %  
Segment length   0.0   mi    % Recreational vehicles   2       %  
Terrain type     Rolling   % No-passing zones       100     %  
Grade: Length    mi       Access points/mi        1       /mi  
      Up/down       %

Two-way hourly volume, V   1178   veh/h  
Directional split    53 / 47   %

---

Average Travel Speed

---

Grade adjustment factor, fG                   0.99  
PCE for trucks, ET                           1.5  
PCE for RVs, ER                               1.1  
Heavy-vehicle adjustment factor,            0.964  
Two-way flow rate, (note-1) vp              1341   pc/h  
Highest directional split proportion (note-2) 711   pc/h

Free-Flow Speed from Field Measurement:  
Field measured speed, SFM                   -       mi/h  
Observed volume, Vf                         -       veh/h  
Estimated Free-Flow Speed:  
Base free-flow speed, BFFS                  60.0   mi/h  
Adj. for lane and shoulder width, fLS       4.2   mi/h  
Adj. for access points, fA                  0.3   mi/h

Free-flow speed, FFS                         55.5   mi/h

Adjustment for no-passing zones, fnp        1.8   mi/h  
Average travel speed, ATS                  43.3   mi/h

---

Percent Time-Spent-Following

---

Grade adjustment factor, fG                   1.00  
PCE for trucks, ET                           1.0  
PCE for RVs, ER                               1.0  
Heavy-vehicle adjustment factor, fHV        1.000  
Two-way flow rate, (note-1) vp              1280   pc/h  
Highest directional split proportion (note-2) 678  
Base percent time-spent-following, BPTSF   67.5   %  
Adj. for directional distribution and no-passing zones, fd/np 9.4  
Percent time-spent-following, PTSF         76.9   %

---

Level of Service and Other Performance Measures

---

Level of service, LOS                         D  
Volume to capacity ratio, v/c               0.42  
Peak 15-min vehicle-miles of travel, VMT15   0       veh-mi  
Peak-hour vehicle-miles of travel, VMT60    0       veh-mi  
Peak 15-min total travel time, TT15         0.0   veh-h

---

Notes:

1. If  $vp \geq 3200$  pc/h, terminate analysis-the LOS is F.
2. If highest directional split  $vp \geq 1700$  pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

Phone:

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Two-Way Two-Lane Highway Segment Analysis

Analyst Kostl Jain  
 Agency/Co. Sabra, Wang & Associates, Inc.  
 Date Performed 10/30/2006  
 Analysis Time Period 8:00 AM - 9:00 AM  
 Highway US 301  
 From/To  
 Jurisdiction  
 Analysis Year 2030 (Weekend Day)  
 Description

Input Data

Highway class Class 1  
 Shoulder width 0.0 ft Peak-hour factor, PHF 0.92  
 Lane width 12.0 ft % Trucks and buses 7 %  
 Segment length 0.0 mi % Recreational vehicles 2 %  
 Terrain type Rolling % No-passing zones 100 %  
 Grade: Length mi Access points/mi 1 /mi  
 Up/down %  
 Two-way hourly volume, V 1648 veh/h  
 Directional split 53 / 47 %

Average Travel Speed

Grade adjustment factor, fG 0.99  
 PCE for trucks, ET 1.5  
 PCE for RVs, ER 1.1  
 Heavy-vehicle adjustment factor, 0.964  
 Two-way flow rate, (note-1) vp 1876 pc/h  
 Highest directional split proportion (note-2) 994 pc/h  
 Free-Flow Speed from Field Measurement:  
 Field measured speed, SFM - mi/h  
 Observed volume, Vf - veh/h  
 Estimated Free-Flow Speed:  
 Base free-flow speed, BFFS 60.0 mi/h  
 Adj. for lane and shoulder width, fLS 4.2 mi/h  
 Adj. for access points, fA 0.3 mi/h  
 Free-flow speed, FFS 55.5 mi/h  
 Adjustment for no-passing zones, fnp 1.2 mi/h  
 Average travel speed, ATS 39.8 mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG 1.00  
 PCE for trucks, ET 1.0  
 PCE for RVs, ER 1.0  
 Heavy-vehicle adjustment factor, fHV 1.000  
 Two-way flow rate, (note-1) vp 1791 pc/h  
 Highest directional split proportion (note-2) 949  
 Base percent time-spent-following, BPTSF 79.3 %  
 Adj. for directional distribution and no-passing zones, fd/np 5.6  
 Percent time-spent-following, PTSF 84.9 %

Level of Service and Other Performance Measures

Level of service, LOS E  
 Volume to capacity ratio, v/c 0.59  
 Peak 15-min vehicle-miles of travel, VMT15 0 veh-mi

Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If  $vp \geq 3200$  pc/h, terminate analysis-the LOS is F.
2. If highest directional split  $vp \geq 1700$  pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	9:00 AM - 10:00 AM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekend Day)
Description	

Input Data

Highway class	Class 1				
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	7	%
Segment length	0.0	mi	% Recreational vehicles	2	%
Terrain type	Rolling		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			
Two-way hourly volume, V	2205	veh/h			
Directional split	53 / 47	%			

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate,(note-1) vp	2511	pc/h
Highest directional split proportion (note-2)	1331	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	1.0	mi/h
Average travel speed, ATS	35.0	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2397	pc/h
Highest directional split proportion (note-2)	1270	
Base percent time-spent-following, BPTSF	87.8	%
Adj.for directional distribution and no-passing zones, fd/np	3.0	
Percent time-spent-following, PTSF	90.9	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.78	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If  $vp \geq 3200$  pc/h, terminate analysis-the LOS is F.
2. If highest directional split  $vp \geq 1700$  pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

Phone: Fax:  
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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	10:00 AM - 11:00 AM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekend Day)
Description	

Input Data

Highway class	Class 1				
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	7	%
Segment length	0.0	mi	% Recreational vehicles	2	%
Terrain type	Rolling		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	2662	veh/h
Directional split	53 / 47	%

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate, (note-1) vp	3031	pc/h
Highest directional split proportion (note-2)	1606	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp	0.8	mi/h
Average travel speed, ATS	31.2	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate, (note-1) vp	2893	pc/h
Highest directional split proportion (note-2)	1533	
Base percent time-spent-following, BPTSF	92.1	%

Adj.for directional distribution and no-passing zones, fd/np 2.0  
 Percent time-spent-following, PTSF 94.1 %

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.95	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	11:00 AM - 12:00 AM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekend Day)
Description	

Input Data

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	2883	veh/h		
Directional split	53 / 47	%		

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate,(note-1) vp	3282	pc/h
Highest directional split proportion (note-2)	1739	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp		mi/h
Average travel speed, ATS		mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00
PCE for trucks, ET	1.0
PCE for RVs, ER	1.0

Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	3134	pc/h
Highest directional split proportion (note-2)	1661	
Base percent time-spent-following, BPTSF	93.6	%
Adj.for directional distribution and no-passing zones, fd/np	1.7	
Percent time-spent-following, PTSF	95.4	%

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Level of Service and Other Performance Measures

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Level of service, LOS		
Volume to capacity ratio, v/c	1.03	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15		veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	12:00 PM - 1:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekend Day)
Description	

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Input Data

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Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	3034	veh/h		
Directional split	50 / 50	%		

---

Average Travel Speed

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate,(note-1) vp	3454	pc/h
Highest directional split proportion (note-2)	1727	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp		mi/h
Average travel speed, ATS		mi/h

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Percent Time-Spent-Following

---

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	3298	pc/h
Highest directional split proportion (note-2)	1649	
Base percent time-spent-following, BPTSF	94.5	%
Adj.for directional distribution and no-passing zones, fd/np	1.4	
Percent time-spent-following, PTSF	95.9	%

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Level of Service and Other Performance Measures

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Level of service, LOS		
Volume to capacity ratio, v/c	1.08	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15		veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	1:00 PM - 2:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekend Day)
Description	

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Input Data

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Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	3102	veh/h		
Directional split	53 / 47	%		

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Average Travel Speed

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate,(note-1) vp	3532	pc/h
Highest directional split proportion (note-2)	1872	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h

Adjustment for no-passing zones, fnp	mi/h	
Average travel speed, ATS	mi/h	
<hr/>		
Percent Time-Spent-Following		
Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	3372	pc/h
Highest directional split proportion (note-2)	1787	
Base percent time-spent-following, BPTSF	94.8	%
Adj.for directional distribution and no-passing zones, fd/np	1.6	
Percent time-spent-following, PTSF	96.5	%

---

Level of Service and Other Performance Measures

---

Level of service, LOS		
Volume to capacity ratio, v/c	1.10	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15		veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	2:00 PM - 3:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekend Day)
Description	

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Input Data

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Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	3092	veh/h		
Directional split	53 / 47	%		

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Average Travel Speed

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate,(note-1) vp	3520	pc/h
Highest directional split proportion (note-2)	1866	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h

Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp		mi/h
Average travel speed, ATS		mi/h

Percent Time-Spent-Following

---

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	3361	pc/h
Highest directional split proportion (note-2)	1781	
Base percent time-spent-following, BPTSF	94.8	%
Adj.for directional distribution and no-passing zones, fd/np	1.6	
Percent time-spent-following, PTSF	96.4	%

Level of Service and Other Performance Measures

---

Level of service, LOS		
Volume to capacity ratio, v/c	1.10	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15		veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	3:00 PM - 4:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekend Day)
Description	

Input Data

---

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	3122	veh/h		
Directional split	53 / 47	%		

Average Travel Speed

---

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate,(note-1) vp	3555	pc/h
Highest directional split proportion (note-2)	1884	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp		mi/h
Average travel speed, ATS		mi/h

Percent Time-Spent-Following

---

Grade adjustment factor, fG		1.00
PCE for trucks, ET		1.0
PCE for RVs, ER		1.0
Heavy-vehicle adjustment factor, fHV		1.000
Two-way flow rate,(note-1) vp	3393	pc/h
Highest directional split proportion (note-2)	1798	
Base percent time-spent-following, BPTSF	94.9	%
Adj.for directional distribution and no-passing zones, fd/np	1.6	
Percent time-spent-following, PTSF	96.6	%

Level of Service and Other Performance Measures

---

Level of service, LOS		
Volume to capacity ratio, v/c	1.11	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15		veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	4:00 PM - 5:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekend Day)
Description	

Input Data

---

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	3104	veh/h		
Directional split	50 / 50	%		

Average Travel Speed

---

Grade adjustment factor, fG	0.99
PCE for trucks, ET	1.5
PCE for RVs, ER	1.1
Heavy-vehicle adjustment factor,	0.964

Two-way flow rate,(note-1) vp	3534	pc/h
Highest directional split proportion (note-2)	1767	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp		mi/h
Average travel speed, ATS		mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG		1.00
PCE for trucks, ET		1.0
PCE for RVs, ER		1.0
Heavy-vehicle adjustment factor, fHV		1.000
Two-way flow rate,(note-1) vp	3374	pc/h
Highest directional split proportion (note-2)	1687	
Base percent time-spent-following, BPTSF	94.8	%
Adj.for directional distribution and no-passing zones, fd/np	1.4	
Percent time-spent-following, PTSF	96.2	%

Level of Service and Other Performance Measures

Level of service, LOS		
Volume to capacity ratio, v/c	1.10	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15		veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	5:00 PM - 6:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekend Day)
Description	

Input Data

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	2936	veh/h		
Directional split	53 / 47	%		

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate,(note-1) vp	3343	pc/h
Highest directional split proportion (note-2)	1772	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp		mi/h
Average travel speed, ATS		mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG		1.00
PCE for trucks, ET		1.0
PCE for RVs, ER		1.0
Heavy-vehicle adjustment factor, fHV		1.000
Two-way flow rate,(note-1) vp		3191 pc/h
Highest directional split proportion (note-2)		1691
Base percent time-spent-following, BPTSF		93.9 %
Adj.for directional distribution and no-passing zones, fd/np		1.7
Percent time-spent-following, PTSF		95.6 %

Level of Service and Other Performance Measures

Level of service, LOS

Volume to capacity ratio, v/c	1.04	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15		veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	6:00 PM - 7:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekend Day)
Description	

Input Data

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	7 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		

Two-way hourly volume, V	2596	veh/h
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Directional split            53 / 47 %

Average Travel Speed

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.964	
Two-way flow rate,(note-1) vp	2956	pc/h
Highest directional split proportion (note-2)	1567	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp	0.8	mi/h
Average travel speed, ATS	31.8	mi/h

Percent Time-Spent-Following

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Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2822	pc/h
Highest directional split proportion (note-2)	1496	
Base percent time-spent-following, BPTSF	91.6	%
Adj.for directional distribution and no-passing zones, fd/np	2.1	
Percent time-spent-following, PTSF	93.7	%

Level of Service and Other Performance Measures

---

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.92	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

- **2030 Average Weekday**

Phone:  
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Two-Way Two-Lane Highway Segment Analysis

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Analyst                   Kosti Jain  
Agency/Co.               Sabra, Wang & Associates, Inc.  
Date Performed           10/30/2006  
Analysis Time Period     7:00 AM - 8:00 AM  
Highway                   US 301  
From/To  
Jurisdiction  
Analysis Year             2030 (Weekday)  
Description

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Input Data

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Highway class   Class 1  
Shoulder width   0.0   ft   Peak-hour factor, PHF   0.92  
Lane width       12.0   ft   % Trucks and buses      13    %  
Segment length   0.0   mi   % Recreational vehicles   2    %  
Terrain type      Rolling   % No-passing zones       100   %  
Grade: Length    mi   Access points/mi        1    /mi  
      Up/down        %  
  
Two-way hourly volume, V   2281   veh/h  
Directional split    50 / 50   %

---

Average Travel Speed

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Grade adjustment factor, fG                   0.99  
PCE for trucks, ET                            1.5  
PCE for RVs, ER                                1.1  
Heavy-vehicle adjustment factor,            0.937  
Two-way flow rate, (note-1) vp              2672   pc/h  
Highest directional split proportion (note-2) 1336   pc/h  
  
Free-Flow Speed from Field Measurement:  
Field measured speed, SFM                   -       mi/h  
Observed volume, Vf                         -       veh/h  
Estimated Free-Flow Speed:  
Base free-flow speed, BFFS                  60.0   mi/h  
Adj. for lane and shoulder width, fLS      4.2    mi/h  
Adj. for access points, fA                  0.3    mi/h  
  
Free-flow speed, FFS                         55.5   mi/h  
  
Adjustment for no-passing zones, fnp        1.0    mi/h  
Average travel speed, ATS                  33.9   mi/h

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Percent Time-Spent-Following

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Grade adjustment factor, fG                   1.00  
PCE for trucks, ET                            1.0  
PCE for RVs, ER                                1.0  
Heavy-vehicle adjustment factor, fHV        1.000  
Two-way flow rate, (note-1) vp              2479   pc/h  
Highest directional split proportion (note-2) 1240  
Base percent time-spent-following, BPTSF   88.7   %  
Adj. for directional distribution and no-passing zones, fd/np 2.8  
Percent time-spent-following, PTSF         91.5   %

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Level of Service and Other Performance Measures

---

Level of service, LOS                        E  
Volume to capacity ratio, v/c               0.83  
Peak 15-min vehicle-miles of travel, VMT15   0       veh-mi  
Peak-hour vehicle-miles of travel, VMT60    0       veh-mi  
Peak 15-min total travel time, TT15        0.0     veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

Analyst Kostl Jain  
 Agency/Co. Sabra, Wang & Associates, Inc.  
 Date Performed 10/30/2006  
 Analysis Time Period 8:00 AM - 9:00 AM  
 Highway US 301  
 From/To  
 Jurisdiction  
 Analysis Year 2030 (Weekday)  
 Description

Input Data

Highway class Class 1  
 Shoulder width 0.0 ft Peak-hour factor, PHF 0.92  
 Lane width 12.0 ft % Trucks and buses 13 %  
 Segment length 0.0 mi % Recreational vehicles 2 %  
 Terrain type Rolling % No-passing zones 100 %  
 Grade: Length mi Access points/mi 1 /mi  
 Up/down %  
 Two-way hourly volume, V 2068 veh/h  
 Directional split 50 / 50 %

Average Travel Speed

Grade adjustment factor, fG 0.99  
 PCE for trucks, ET 1.5  
 PCE for RVs, ER 1.1  
 Heavy-vehicle adjustment factor, 0.937  
 Two-way flow rate,(note-1) vp 2423 pc/h  
 Highest directional split proportion (note-2) 1212 pc/h  
 Free-Flow Speed from Field Measurement:  
 Field measured speed, SFM - mi/h  
 Observed volume, Vf - veh/h  
 Estimated Free-Flow Speed:  
 Base free-flow speed, BFFS 60.0 mi/h  
 Adj. for lane and shoulder width, fLS 4.2 mi/h  
 Adj. for access points, fA 0.3 mi/h  
 Free-flow speed, FFS 55.5 mi/h  
 Adjustment for no-passing zones, fnp 1.1 mi/h  
 Average travel speed, ATS 35.7 mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG 1.00  
 PCE for trucks, ET 1.0  
 PCE for RVs, ER 1.0  
 Heavy-vehicle adjustment factor, fHV 1.000  
 Two-way flow rate,(note-1) vp 2248 pc/h  
 Highest directional split proportion (note-2) 1124  
 Base percent time-spent-following, BPTSF 86.1 %  
 Adj.for directional distribution and no-passing zones, fd/np 3.6  
 Percent time-spent-following, PTSF 89.7 %

Level of Service and Other Performance Measures

Level of service, LOS E  
 Volume to capacity ratio, v/c 0.76  
 Peak 15-min vehicle-miles of travel, VMT15 0 veh-mi

Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If  $vp \geq 3200$  pc/h, terminate analysis-the LOS is F.
2. If highest directional split  $vp \geq 1700$  pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

Phone: Fax:  
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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	9:00 AM - 10:00 AM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekday)
Description	

Input Data

Highway class	Class 1				
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	13	%
Segment length	0.0	mi	% Recreational vehicles	2	%
Terrain type	Rolling		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			
Two-way hourly volume, V	1758	veh/h			
Directional split	50 / 50	%			

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.937	
Two-way flow rate, (note-1) vp	2059	pc/h
Highest directional split proportion (note-2)	1030	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATS	38.5	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate, (note-1) vp	1911	pc/h
Highest directional split proportion (note-2)	956	
Base percent time-spent-following, BPTSF	81.4	%
Adj. for directional distribution and no-passing zones, fd/np	4.9	
Percent time-spent-following, PTSF	86.3	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.64	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If  $vp \geq 3200$  pc/h, terminate analysis-the LOS is F.
2. If highest directional split  $vp \geq 1700$  pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	10:00 AM - 11:00 AM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekday)
Description	

Input Data

Highway class	Class 1				
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	13	%
Segment length	0.0	mi	% Recreational vehicles	2	%
Terrain type	Rolling		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	1746	veh/h
Directional split	50 / 50	%

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.937	
Two-way flow rate, (note-1) vp	2045	pc/h
Highest directional split proportion (note-2)	1023	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATS	38.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate, (note-1) vp	1898	pc/h
Highest directional split proportion (note-2)	949	
Base percent time-spent-following, BPTSF	81.1	%

Adj.for directional distribution and no-passing zones, fd/np 5.0  
 Percent time-spent-following, PTSF 86.1 %

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.64	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	11:00 AM - 12:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekday)
Description	

Input Data

Highway class	Class 1				
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	13	%
Segment length	0.0	mi	% Recreational vehicles	2	%
Terrain type	Rolling		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			
Two-way hourly volume, V	1675	veh/h			
Directional split	50 / 50	%			

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.937	
Two-way flow rate,(note-1) vp	1962	pc/h
Highest directional split proportion (note-2)	981	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATS	39.2	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00
PCE for trucks, ET	1.0
PCE for RVs, ER	1.0

Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1821	pc/h
Highest directional split proportion (note-2)	911	
Base percent time-spent-following, BPTSF	79.8	%
Adj.for directional distribution and no-passing zones, fd/np	5.4	
Percent time-spent-following, PTSF	85.3	%

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Level of Service and Other Performance Measures

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Level of service, LOS	E	
Volume to capacity ratio, v/c	0.61	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	12:00 PM - 1:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekday)
Description	

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Input Data

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Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	13 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	1610	veh/h		
Directional split	50 / 50	%		

---

Average Travel Speed

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.937	
Two-way flow rate,(note-1) vp	1886	pc/h
Highest directional split proportion (note-2)	943	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	1.2	mi/h
Average travel speed, ATS	39.7	mi/h

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Percent Time-Spent-Following

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Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1750	pc/h
Highest directional split proportion (note-2)	875	
Base percent time-spent-following, BPTSF	78.5	%
Adj.for directional distribution and no-passing zones, fd/np	5.9	
Percent time-spent-following, PTSF	84.4	%

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Level of Service and Other Performance Measures

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Level of service, LOS	E	
Volume to capacity ratio, v/c	0.59	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	1:00 PM - 2:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekday)
Description	

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Input Data

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Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	13 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	1760	veh/h		
Directional split	50 / 50	%		

---

Average Travel Speed

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.937	
Two-way flow rate,(note-1) vp	2062	pc/h
Highest directional split proportion (note-2)	1031	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h

Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATS	38.4	mi/h

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Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1913	pc/h
Highest directional split proportion (note-2)	957	
Base percent time-spent-following, BPTSF	81.4	%
Adj.for directional distribution and no-passing zones, fd/np	4.9	
Percent time-spent-following, PTSF	86.3	%

---

Level of Service and Other Performance Measures

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Level of service, LOS	E	
Volume to capacity ratio, v/c	0.64	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	2:00 PM - 3:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekday)
Description	

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Input Data

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Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	13 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	2010	veh/h		
Directional split	50 / 50	%		

---

Average Travel Speed

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.937	
Two-way flow rate,(note-1) vp	2355	pc/h
Highest directional split proportion (note-2)	1178	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h

Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	55.5	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATS	36.2	mi/h

---

Percent Time-Spent-Following		
Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2185	pc/h
Highest directional split proportion (note-2)	1093	
Base percent time-spent-following, BPTSF	85.3	%
Adj.for directional distribution and no-passing zones, fd/np	3.8	
Percent time-spent-following, PTSF	89.1	%

---

Level of Service and Other Performance Measures

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Level of service, LOS	E	
Volume to capacity ratio, v/c	0.74	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

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Two-Way Two-Lane Highway Segment Analysis

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Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	3:00 PM - 4:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekday)
Description	

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Input Data

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Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	13 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	2708	veh/h		
Directional split	50 / 50	%		

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Average Travel Speed

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Grade adjustment factor, fG	0.99
PCE for trucks, ET	1.5
PCE for RVs, ER	1.1
Heavy-vehicle adjustment factor,	0.937
Two-way flow rate,(note-1) vp	3172 pc/h
Highest directional split proportion (note-2)	1586 pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS		
	55.5	mi/h
Adjustment for no-passing zones, fnp		
	0.7	mi/h
Average travel speed, ATS	30.2	mi/h

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Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2943	pc/h
Highest directional split proportion (note-2)	1472	
Base percent time-spent-following, BPTSF	92.5	%
Adj.for directional distribution and no-passing zones, fd/np	1.8	
Percent time-spent-following, PTSF	94.3	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.99	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
E-Mail: \_\_\_\_\_

Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	4:00 PM - 5:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekday)
Description	

Input Data

Highway class	Class 1				
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	13	%
Segment length	0.0	mi	% Recreational vehicles	2	%
Terrain type	Rolling		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			
Two-way hourly volume, V	3244	veh/h			
Directional split	50 / 50	%			

Average Travel Speed

Grade adjustment factor, fG	0.99
PCE for trucks, ET	1.5
PCE for RVs, ER	1.1
Heavy-vehicle adjustment factor,	0.937

Two-way flow rate,(note-1) vp	3800	pc/h
Highest directional split proportion (note-2)	1900	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp		mi/h
Average travel speed, ATS		mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG		1.00
PCE for trucks, ET		1.0
PCE for RVs, ER		1.0
Heavy-vehicle adjustment factor, fHV		1.000
Two-way flow rate,(note-1) vp	3526	pc/h
Highest directional split proportion (note-2)	1763	
Base percent time-spent-following, BPTSF	95.5	%
Adj.for directional distribution and no-passing zones, fd/np	1.4	
Percent time-spent-following, PTSF	96.9	%

Level of Service and Other Performance Measures

Level of service, LOS		
Volume to capacity ratio, v/c	1.19	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15		veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

Phone: Fax:  
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	5:00 PM - 6:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekday)
Description	

Input Data

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	13 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		
Two-way hourly volume, V	2812	veh/h		
Directional split	50 / 50	%		

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.937	
Two-way flow rate,(note-1) vp	3294	pc/h
Highest directional split proportion (note-2)	1647	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp		mi/h
Average travel speed, ATS		mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG		1.00
PCE for trucks, ET		1.0
PCE for RVs, ER		1.0
Heavy-vehicle adjustment factor, fHV		1.000
Two-way flow rate,(note-1) vp		3057 pc/h
Highest directional split proportion (note-2)		1529
Base percent time-spent-following, BPTSF		93.2 %
Adj.for directional distribution and no-passing zones, fd/np		1.6
Percent time-spent-following, PTSF		94.8 %

Level of Service and Other Performance Measures

Level of service, LOS		
Volume to capacity ratio, v/c		1.03
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15		veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS2000: Two-Lane Highways Release 4.1d

Phone: Fax:  
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	Kosti Jain
Agency/Co.	Sabra, Wang & Associates, Inc.
Date Performed	10/30/2006
Analysis Time Period	6:00 PM - 7:00 PM
Highway	US 301
From/To	
Jurisdiction	
Analysis Year	2030 (Weekday)
Description	

Input Data

Highway class	Class 1			
Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92
Lane width	12.0	ft	% Trucks and buses	13 %
Segment length	0.0	mi	% Recreational vehicles	2 %
Terrain type	Rolling		% No-passing zones	100 %
Grade: Length		mi	Access points/mi	1 /mi
Up/down		%		

Two-way hourly volume, V	2086	veh/h
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Directional split            50 /   50 %

Average Travel Speed

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Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.937	
Two-way flow rate,(note-1) vp	2444	pc/h
Highest directional split proportion (note-2)	1222	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.3	mi/h

Free-flow speed, FFS	55.5	mi/h
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Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATS	35.5	mi/h

Percent Time-Spent-Following

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Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2267	pc/h
Highest directional split proportion (note-2)	1134	
Base percent time-spent-following, BPTSF	86.4	%
Adj.for directional distribution and no-passing zones, fd/np	3.5	
Percent time-spent-following, PTSF	89.9	%

Level of Service and Other Performance Measures

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Level of service, LOS	E	
Volume to capacity ratio, v/c	0.76	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

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Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.