

**APPENDIX M**  
**ROADWAY ANALYSES**

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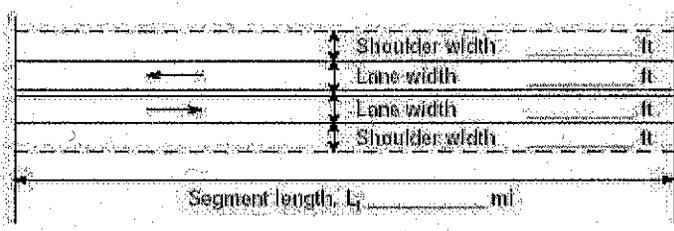
Appendix M1	Level of Service Analysis – Exiting Conditions
Appendix M2	Level of Service Analysis – Exiting Plus Construction Plus Detour Conditions
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**APPENDIX M1**  
**LEVEL OF SERVICE ANALYSIS – EXISTING CONDITIONS**

## TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	NSA	Highway	Delevan Road
Agency or Company	County of Colusa	From/To	
Date Performed	8/23/2006	Jurisdiction	Colusa County
Analysis Time Period	Peak Hour	Analysis Year	Existing Conditions

Project Description: Colusa Power Plant

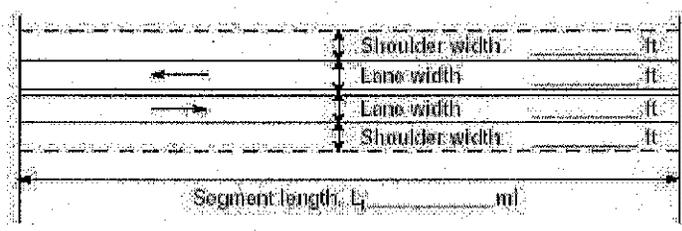
Input Data																			
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td><input type="checkbox"/> Class I highway</td> <td><input checked="" type="checkbox"/> Class II highway</td> </tr> <tr> <td>Terrain</td> <td><input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling</td> </tr> <tr> <td>Two-way hourly volume</td> <td>37 veh/h</td> </tr> <tr> <td>Directional split</td> <td>60 / 40</td> </tr> <tr> <td>Peak-hour factor, PHF</td> <td>0.92</td> </tr> <tr> <td>No-passing zone</td> <td>0</td> </tr> <tr> <td>% Trucks and Buses, P<sub>T</sub></td> <td>10 %</td> </tr> <tr> <td>% Recreational vehicles, P<sub>R</sub></td> <td>0 %</td> </tr> <tr> <td>Access points/ mi</td> <td>10</td> </tr> </table>	<input type="checkbox"/> Class I highway	<input checked="" type="checkbox"/> Class II highway	Terrain	<input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling	Two-way hourly volume	37 veh/h	Directional split	60 / 40	Peak-hour factor, PHF	0.92	No-passing zone	0	% Trucks and Buses, P <sub>T</sub>	10 %	% Recreational vehicles, P <sub>R</sub>	0 %	Access points/ mi	10
<input type="checkbox"/> Class I highway	<input checked="" type="checkbox"/> Class II highway																		
Terrain	<input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling																		
Two-way hourly volume	37 veh/h																		
Directional split	60 / 40																		
Peak-hour factor, PHF	0.92																		
No-passing zone	0																		
% Trucks and Buses, P <sub>T</sub>	10 %																		
% Recreational vehicles, P <sub>R</sub>	0 %																		
Access points/ mi	10																		

Average Travel Speed	
Grade adjustment factor, f <sub>G</sub> (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-9)	1.7
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))	0.935
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )	43
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)	26
Free-Flow Speed from Field Measurement	Estimated Free-Flow Speed
Field Measured speed, S <sub>FM</sub> <span style="float: right;">mi/h</span>	Base free-flow speed, BFFS <sub>FM</sub> <span style="float: right;">45.0 mi/h</span>
Observed volume, V <sub>f</sub> <span style="float: right;">veh/h</span>	Adj. for lane width and shoulder width <sup>3</sup> , f <sub>LS</sub> (Exhibit 20-5) <span style="float: right;">4.2 mi/h</span>
Free-flow speed, FFS = S <sub>FM</sub> + 0.00776(V <sub>f</sub> /f <sub>HV</sub> ) <span style="float: right;">mi/h</span>	Adj. for access points, f <sub>A</sub> (Exhibit 20-6) <span style="float: right;">2.5 mi/h</span>
	Free-flow speed, FFS (FSS = BFFS * f <sub>LS</sub> * f <sub>A</sub> ) <span style="float: right;">38.3 mi/h</span>
Adj. for no-passing zones, f <sub>np</sub> (mi/h) (Exhibit 20-11)	0.0
Average travel speed, ATS (mi/h) ATS = FFS - 0.00776v <sub>p</sub> * f <sub>np</sub>	38.0

Percent Time Spent Following	
Grade Adjustment factor, f <sub>G</sub> (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))	0.990
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )	41
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)	25
Base percent time-spent-following, BPTSF(%) = 100(1 - e <sup>-0.000879v<sub>p</sub></sup> )	3.5
Adj. for directional distribution and no-passing zone, f <sub>d/np</sub> (%) (Exh. 20-12)	2.5
Percent time-spent-following, PTSF(%) = BPTSF * f <sub>d/np</sub>	6.0

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	A
Volume to capacity ratio, v/c = V <sub>p</sub> / 3,200	0.01
Peak 15-min veh-miles of travel, VMT <sub>15</sub> (veh-mi) = 0.25L <sub>t</sub> (V/PHF)	10

Peak-hour vehicle-miles of travel, $VMT_{60}(\text{veh-m})=V*L_t$	37
Peak 15-min total travel time, $TT_{15}(\text{veh-h})=VMT_{15}/ATS$	0.3
<b>Notes</b>	
1. If $V_p \geq 3,200$ pc/h, terminate analysis-the LOS is F. 2. If highest directional split $V_p \geq 1,700$ pc/h, terminated analysis-the LOS is F.	

<b>TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET</b>			
<b>General Information</b>		<b>Site Information</b>	
Analyst	NSA	Highway	McDermott Road
Agency or Company	County of Colusa	From/To	North of Teresa Creek Bridge
Date Performed	8/23/2006	Jurisdiction	Colusa County
Analysis Time Period	Peak Hour	Analysis Year	Existing Conditions
Project Description: Colusa Power Plant			
<b>Input Data</b>			
		<input type="checkbox"/> Class I highway <input checked="" type="checkbox"/> Class II highway Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling Two-way hourly volume    5 veh/h Directional split    60 / 40 Peak-hour factor, PHF    0.92 No-passing zone    0 % Trucks and Buses, P <sub>T</sub> 10 % % Recreational vehicles, P <sub>R</sub> 0% Access points/ mi    10	
<b>Average Travel Speed</b>			
Grade adjustment factor, f <sub>G</sub> (Exhibit 20-7)		1.00	
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-9)		1.7	
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-9)		1.0	
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))		0.935	
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )		6	
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)		4	
Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S <sub>FM</sub> mi/h		Base free-flow speed, BFFS <sub>FM</sub>	45.0 mi/h
Observed volume, V <sub>f</sub> veh/h		Adj. for lane width and shoulder width <sup>3</sup> , f <sub>LS</sub> (Exhibit 20-5)	4.2 mi/h
Free-flow speed, FFS    FFS = S <sub>FM</sub> + 0.00776(V <sub>f</sub> / f <sub>HV</sub> )    mi/h		Adj. for access points, f <sub>A</sub> (Exhibit 20-6)	2.5 mi/h
		Free-flow speed, FFS (FFS = BFFS - f <sub>LS</sub> - f <sub>A</sub> )	38.3 mi/h
Adj. for no-passing zones, f <sub>np</sub> (mi/h) (Exhibit 20-11)		0.0	
Average travel speed, ATS (mi/h)    ATS = FFS - 0.00776v <sub>p</sub> - f <sub>np</sub>		38.3	
<b>Percent Time-Spent-Following</b>			
Grade Adjustment factor, f <sub>G</sub> (Exhibit 20-8)		1.00	
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-10)		1.1	
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-10)		1.0	
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))		0.990	
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )		5	
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)		3	
Base percent time-spent-following, BPTSF(%) = 100(1 - e <sup>-0.000879v<sub>p</sub></sup> )		0.4	
Adj. for directional distribution and no-passing zone, f <sub>d/np</sub> (%) (Exh. 20-12)		2.7	
Percent time-spent-following, PTSF(%) = BPTSF + f <sub>d/np</sub>		3.1	
<b>Level of Service and Other Performance Measures</b>			
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)		A	
Volume to capacity ratio, v/c = V <sub>p</sub> / 3,200		0.00	
Peak 15-min veh-miles of travel, VMT <sub>15</sub> (veh-mi) = 0.25L <sub>p</sub> (V/PHF)		1	

Peak-hour vehicle-miles of travel, $VMT_{60}(\text{veh-m})=V^*L_t$	5
Peak 15-min total travel time, $TT_{15}(\text{veh-h})=VMT_{15}/ATS$	0.0
<b>Notes</b>	
1. If $V_p \geq 3,200$ pc/h, terminate analysis-the LOS is F. 2. If highest directional split $V_p \geq 1,700$ pc/h, terminated analysis-the LOS is F.	

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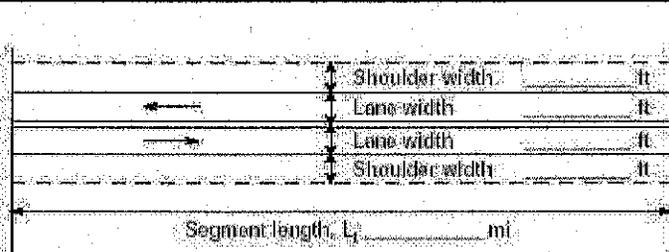
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## TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	NSA	Highway	McDermott Road
Agency or Company	County of Colusa	From/To	
Date Performed	8/23/2006	Jurisdiction	Colusa County
Analysis Time Period	Peak Hour	Analysis Year	Existing Conditions

Project Description: Colusa Power Plant

**Input Data**



<p>Shows North Arrow</p>	<input type="checkbox"/> Class I highway <input checked="" type="checkbox"/> Class II highway
	Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling
	Two-way hourly volume    18 veh/h
	Directional split    60 / 40
	Peak-hour factor, PHF    0.92
	No-passing zone    0
	% Trucks and Buses, P <sub>T</sub> 10 %
	% Recreational vehicles, P <sub>R</sub> 0%
	Access points/ ml    10

**Average Travel Speed**

Grade adjustment factor, f <sub>G</sub> (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-9)	1.7
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))	0.936
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )	21
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)	13
Free-Flow Speed from Field Measurement	Estimated Free-Flow Speed
Field Measured speed, S <sub>FM</sub> <i>mi/h</i>	Base free-flow speed, BFFS <sub>FM</sub> 45.0 <i>mi/h</i>
Observed volume, V <sub>f</sub> <i>veh/h</i>	Adj. for lane width and shoulder width <sup>3</sup> , f <sub>LS</sub> (Exhibit 20-5)    4.2 <i>mi/h</i>
Free-flow speed, FFS    FFS = S <sub>FM</sub> + 0.00776(V <sub>f</sub> /f <sub>HV</sub> ) <i>mi/h</i>	Adj. for access points, f <sub>A</sub> (Exhibit 20-6)    2.5 <i>mi/h</i>
	Free-flow speed, FFS (FFS = BFFS - f <sub>LS</sub> - f <sub>A</sub> )    38.3 <i>mi/h</i>
Adj. for no-passing zones, f <sub>np</sub> ( <i>mi/h</i> ) (Exhibit 20-11)	0.0
Average travel speed, ATS ( <i>mi/h</i> )    ATS = FFS - 0.00776v <sub>p</sub> - f <sub>np</sub>	38.1

**Percent Time-Spent-Following**

Grade Adjustment factor, f <sub>G</sub> (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))	0.990
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )	20
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)	12
Base percent time-spent-following, BPTSF(%) = 100(1 - e <sup>-0.000879v<sub>p</sub></sup> )	1.7
Adj. for directional distribution and no-passing zone, f <sub>d/np</sub> (%)(Exh. 20-12)	2.6
Percent time-spent-following, PTSF(%) = BPTSF + f <sub>d/np</sub>	4.3

**Level of Service and Other Performance Measures**

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	A
Volume to capacity ratio, v/c = V <sub>p</sub> / 3,200	0.01
Peak 15-min veh-miles of travel, VMT <sub>15</sub> (veh- mi) = 0.25L <sub>s</sub> (V/PHF)	5

Peak-hour vehicle-miles of travel, $VMT_{60}(\text{veh-mi})=V^*L_t$	18
Peak 15-min total travel time, $TT_{15}(\text{veh-h})=VMT_{15}/ATS$	0.1
<b>Notes</b>	
1. If $V_p \geq 3,200$ pc/h, terminate analysis-the LOS is F. 2. If highest directional split $V_p \geq 1,700$ pc/h, terminated analysis-the LOS is F.	

## TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

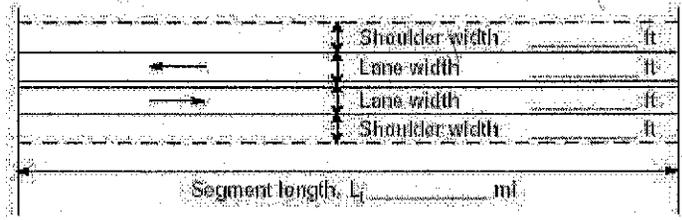
General Information		Site Information	
Analyst	NSA	Highway	Old 99W
Agency or Company	County of Colusa	From/To	
Date Performed	8/23/2006	Jurisdiction	Colusa County
Analysis Time Period	Peak Hour	Analysis Year	Existing Conditions
Project Description: <i>Colusa Power Plant</i>			
Input Data			
		<input checked="" type="checkbox"/> Class I highway <input type="checkbox"/> Class II highway Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling Two-way hourly volume    96 veh/h Directional split    60 / 40 Peak-hour factor, PHF    0.92 No-passing zone    0 % Trucks and Buses, P <sub>T</sub> 10 % % Recreational vehicles, P <sub>R</sub> 0% Access points / mi    10	
Average Travel Speed			
Grade adjustment factor, f <sub>G</sub> (Exhibit 20-7)		1.00	
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-9)		1.7	
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-9)		1.0	
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))		0.935	
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )		112	
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)		67	
Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S <sub>FM</sub> mi/h		Base free-flow speed, BFFS <sub>FM</sub>	60.0 mi/h
Observed volume, V <sub>f</sub> veh/h		Adj. for lane width and shoulder width <sup>3</sup> , f <sub>LS</sub> (Exhibit 20-5)	4.2 mi/h
Free-flow speed, FFS    FFS = S <sub>FM</sub> + 0.00776(V <sub>f</sub> / f <sub>HV</sub> )    mi/h		Adj. for access points, f <sub>A</sub> (Exhibit 20-6)	2.5 mi/h
		Free-flow speed, FFS (FSS = BFFS * f <sub>LS</sub> * f <sub>A</sub> )	53.3 mi/h
Adj. for no-passing zones, f <sub>np</sub> (mi/h) (Exhibit 20-11)		0.0	
Average travel speed, ATS (mi/h)    ATS = FFS - 0.00776v <sub>p</sub> * f <sub>np</sub>		52.4	
Percent Time-Spent-Following			
Grade Adjustment factor, f <sub>G</sub> (Exhibit 20-8)		1.00	
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-10)		1.1	
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-10)		1.0	
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))		0.990	
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )		105	
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)		63	
Base percent time-spent-following, BPTSF(%) = 100(1 - e <sup>-0.000879v<sub>p</sub></sup> )		8.8	
Adj. for directional distribution and no-passing zone, f <sub>d/np</sub> (%) (Exh. 20-12)		2.1	
Percent time-spent-following, PTSF(%) = BPTSF + f <sub>d/np</sub>		10.9	
Level of Service and Other Performance Measures			
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)		B	
Volume to capacity ratio, v/c = v <sub>p</sub> / 3,200		0.04	
Peak 15-min veh-miles of travel, VMT <sub>15</sub> (veh-mi) = 0.25L <sub>t</sub> (V/PHF)		26	

Peak-hour vehicle-miles of travel, $VMT_{60}(\text{veh-m})=V*L_t$	96
Peak 15-min total travel time, $TT_{15}(\text{veh-h})=VMT_{15}/ATS$	0.5
<b>Notes</b>	
1. If $V_p \geq 3,200$ pc/h, terminate analysis-the LOS is F.	
2. If highest directional split $V_p \geq 1,700$ pc/h, terminated anlysis-the LOS is F.	

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<b>TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET</b>			
<b>General Information</b>		<b>Site Information</b>	
Analyst	NSA	Highway	Road 68
Agency or Company	County of Colusa	From/To	
Date Performed	8/23/2006	Jurisdiction	Colusa County
Analysis Time Period	Peak Hour	Analysis Year	Existing Conditions
Project Description: Colusa Power Plant			
<b>Input Data</b>			
		<input checked="" type="checkbox"/> Class I highway <input type="checkbox"/> Class II highway Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling Two-way hourly volume    8 veh/h Directional split    60 / 40 Peak-hour factor, PHF    0.92 No-passing zone    0 % Trucks and Buses, P <sub>T</sub> 10 % % Recreational vehicles, P <sub>R</sub> 0% Access points/ mi    10	
<b>Average Travel Speed</b>			
Grade adjustment factor, f <sub>G</sub> (Exhibit 20-7)		1.00	
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-9)		1.7	
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-9)		1.0	
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))		0.935	
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = VI / (PHF * f <sub>G</sub> * f <sub>HV</sub> )		9	
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)		5	
Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S <sub>FM</sub> mi/h		Base free-flow speed, BFFS <sub>FM</sub>	60.0 mi/h
Observed volume, V <sub>f</sub> veh/h		Adj. for lane width and shoulder width <sup>3</sup> , f <sub>LS</sub> (Exhibit 20-5)	4.2 mi/h
Free-flow speed, FFS = S <sub>FM</sub> + 0.00776(V <sub>f</sub> /f <sub>HV</sub> )    mi/h		Adj. for access points, f <sub>A</sub> (Exhibit 20-6)	2.5 mi/h
		Free-flow speed, FFS = (FFS = BFFS - f <sub>LS</sub> - f <sub>A</sub> )	53.3 mi/h
Adj. for no-passing zones, f <sub>np</sub> (mi/h) (Exhibit 20-11)		0.0	
Average travel speed, ATS (mi/h) ATS = FFS - 0.00776 v <sub>p</sub> - f <sub>np</sub>		53.2	
<b>Percent Time-Spent-Following</b>			
Grade Adjustment factor, f <sub>G</sub> (Exhibit 20-8)		1.00	
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-10)		1.1	
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-10)		1.0	
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))		0.990	
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = VI / (PHF * f <sub>G</sub> * f <sub>HV</sub> )		9	
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)		5	
Base percent time-spent-following, BPTSF(%) = 100(1 - e <sup>-0.000879v<sub>p</sub></sup> )		0.8	
Adj. for directional distribution and no-passing zone, f <sub>d/np</sub> (%)(Exh. 20-12)		2.7	
Percent time-spent-following, PTSF(%) = BPTSF + f <sub>d/np</sub>		3.4	
<b>Level of Service and Other Performance Measures</b>			
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)		B	
Volume to capacity ratio, v/c = V <sub>p</sub> / 3,200		0.00	
Peak 15-min veh-miles of travel, VMT <sub>15</sub> (veh-mi) = 0.25L <sub>p</sub> (V/PHF)		2	

Peak-hour vehicle-miles of travel, $VMT_{60}(\text{veh-mi})=V \cdot L_t$	8
Peak 15-min total travel time, $TT_{15}(\text{veh-h})= VMT_{15}/ATS$	0.0
<b>Notes</b>	
1. If $V_p \geq 3,200$ pc/h, terminate analysis-the LOS is F.	
2. If highest directional split $V_p \geq 1,700$ pc/h, terminated anlysis-the LOS is F.	

Phone:  
E-mail:

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PLANNING ANALYSIS

Analyst: NSA  
 Agency/Co: County of Colusa  
 Date: 8/23/2006  
 Analysis Period: Peak Hour  
 Highway: Interstate 5  
 From/To: North of Delevan Road  
 Jurisdiction: Colusa County  
 Analysis Year: Existing Conditions  
 Project ID: Colusa Power Plant

INPUT DATA

Total AADT volume, AADT 27050 vpd  
 Proportion AADT during peak hour, K 0.10  
 Percent peak-hour traffic in heaviest direction, D 60 %  
 Trucks 10 %  
 Terrain type Level  
 Base free-flow speed, BFFS 60.0 mph

ANALYSIS

DDHV = AADT x D x K  
 DDHV = 27050 x 0.60 x 0.10 = 1623

Volume for : LOS  
 4-lane highway = 1623 vph/2 lanes = 811 vphpl B  
 6-lane highway = 1623 vph/3 lanes = 541 vphpl B

LEVEL OF SERVICE

Terrain Level	LOS	Free-Flow Speed = 60 mph					Free-Flow Speed = 50 mph				
		Percent Trucks					Percent Trucks				
		0	5	10	15	20	0	5	10	15	20
Terrain Level	A	560	550	530	520	510	440	430	420	410	400
	B	920	900	870	850	840	710	700	680	660	650
	C	1310	1280	1250	1220	1190	1030	1000	980	960	940
	D	1680	1640	1600	1570	1530	1350	1320	1290	1260	1230
	E	1870	1820	1780	1740	1700	1610	1570	1530	1500	1460
Rolling	A	560	520	490	460	430	440	410	380	360	340
	B	920	850	800	750	710	710	660	620	580	550
	C	1310	1220	1140	1070	1010	1030	960	900	840	790
	D	1680	1570	1470	1380	1300	1350	1260	1180	1100	1040
	E	1870	1740	1620	1520	1440	1610	1500	1400	1310	1240
Mountain	A	560	480	420	370	330	440	370	320	290	260

B	920	780	680	600	540	710	610	530	470	420
C	1310	1120	970	860	770	1030	880	760	680	610
D	1680	1430	1250	1100	990	1350	1150	1000	890	800
E	1870	1590	1380	1220	1100	1610	1370	1190	1050	950

Assumptions: highway with 60 mi/h FFS has 8 access points/mi; highway with 50 mi/h FFS has 25 access points/mi; lane width = 12 ft; shoulder width > 6 ft; divided highway; PHF = 0.88; all heavy vehicles are trucks and regular commuters

Phone:  
E-mail:

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PLANNING ANALYSIS

Analyst: NSA  
 Agency/Co: County of Colusa  
 Date: 8/23/2006  
 Analysis Period: Peak Hour  
 Highway: Interstate 5  
 From/To: South of Delevan Road  
 Jurisdiction: Colusa County  
 Analysis Year: Existing Conditions  
 Project ID: Colusa Power Plant

INPUT DATA

Total AADT volume, AADT 27050 vpd  
 Proportion AADT during peak hour, K 0.10  
 Percent peak-hour traffic in heaviest direction, D 60 %  
 Trucks 10 %  
 Terrain type Level  
 Base free-flow speed, BFFS 60.0 mph

ANALYSIS

DDHV = AADT x D x K  
 DDHV = 27050 x 0.60 x 0.10 = 1623

Volume for : LOS  
 4-lane highway = 1623 vph/2 lanes = 811 vphpl B  
 6-lane highway = 1623 vph/3 lanes = 541 vphpl B

LEVEL OF SERVICE

	LOS	Free-Flow Speed = 60 mph					Free-Flow Speed = 50 mph				
		Percent Trucks					Percent Trucks				
		0	5	10	15	20	0	5	10	15	20
Terrain Level	A	560	550	530	520	510	440	430	420	410	400
	B	920	900	870	850	840	710	700	680	660	650
	C	1310	1280	1250	1220	1190	1030	1000	980	960	940
	D	1680	1640	1600	1570	1530	1350	1320	1290	1260	1230
	E	1870	1820	1780	1740	1700	1610	1570	1530	1500	1460
Rolling	A	560	520	490	460	430	440	410	380	360	340
	B	920	850	800	750	710	710	660	620	580	550
	C	1310	1220	1140	1070	1010	1030	960	900	840	790
	D	1680	1570	1470	1380	1300	1350	1260	1180	1100	1040
	E	1870	1740	1620	1520	1440	1610	1500	1400	1310	1240
Mountain	A	560	480	420	370	330	440	370	320	290	260

B	920	780	680	600	540	710	610	530	470	420
C	1310	1120	970	860	770	1030	880	760	680	610
D	1680	1430	1250	1100	990	1350	1150	1000	890	800
E	1870	1590	1380	1220	1100	1610	1370	1190	1050	950

Assumptions: highway with 60 mi/h FFS has 8 access points/mi; highway with 50 mi/h FFS has 25 access points/mi; lane width = 12 ft; shoulder width > 6 ft; divided highway; PHF = 0.88; all heavy vehicles are trucks and regular commuters

Phone:  
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PLANNING ANALYSIS

Analyst: NSA  
 Agency/Co: County of Colusa  
 Date: 8/23/2006  
 Analysis Period: Peak Hour  
 Highway: Interstate 5  
 From/To: North of Road 68  
 Jurisdiction: Colusa County  
 Analysis Year: Existing Conditions  
 Project ID: Colusa Power Plant

INPUT DATA

Total AADT volume, AADT	26550	vpd
Proportion AADT during peak hour, K	0.10	
Percent peak-hour traffic in heaviest direction, D	60	%
Trucks	10	%
Terrain type	Level	
Base free-flow speed, BFFS	60.0	mph

ANALYSIS

DDHV = AADT x D x K  
 DDHV = 26550 x 0.60 x 0.10 = 1593

Volume for :			LOS
4-lane highway = 1593	vph/2 lanes = 796	vphpl	B
6-lane highway = 1593	vph/3 lanes = 531	vphpl	B

LEVEL OF SERVICE

		Free-Flow Speed = 60 mph					Free-Flow Speed = 50 mph				
		Percent Trucks					Percent Trucks				
Terrain	LOS	0	5	10	15	20	0	5	10	15	20
Level	A	560	550	530	520	510	440	430	420	410	400
	B	920	900	870	850	840	710	700	680	660	650
	C	1310	1280	1250	1220	1190	1030	1000	980	960	940
	D	1680	1640	1600	1570	1530	1350	1320	1290	1260	1230
	E	1870	1820	1780	1740	1700	1610	1570	1530	1500	1460
Rolling	A	560	520	490	460	430	440	410	380	360	340
	B	920	850	800	750	710	710	660	620	580	550
	C	1310	1220	1140	1070	1010	1030	960	900	840	790
	D	1680	1570	1470	1380	1300	1350	1260	1180	1100	1040
	E	1870	1740	1620	1520	1440	1610	1500	1400	1310	1240
Mountain	A	560	480	420	370	330	440	370	320	290	260

B	920	780	680	600	540	710	610	530	470	420
C	1310	1120	970	860	770	1030	880	760	680	610
D	1680	1430	1250	1100	990	1350	1150	1000	890	800
E	1870	1590	1380	1220	1100	1610	1370	1190	1050	950

Assumptions: highway with 60 mi/h FFS has 8 access points/mi; highway with 50 mi/h FFS has 25 access points/mi; lane width = 12 ft; shoulder width > 6 ft; divided highway; PHF = 0.88; all heavy vehicles are trucks and regular commuters

Phone:  
E-mail:

Fax:

PLANNING ANALYSIS

Analyst: NSA  
 Agency/Co: County of Colusa  
 Date: 8/23/2006  
 Analysis Period: Peak Hour  
 Highway: Interstate 5  
 From/To: South of Road 68  
 Jurisdiction: Colusa County  
 Analysis Year: Existing Conditions  
 Project ID: Colusa Power Plant

INPUT DATA

Total AADT volume, AADT 27050 vpd  
 Proportion AADT during peak hour, K 0.10  
 Percent peak-hour traffic in heaviest direction, D 60 %  
 Trucks 10 %  
 Terrain type Level  
 Base free-flow speed, BFSS 60.0 mph

ANALYSIS

DDHV = AADT x D x K  
 DDHV = 27050 x 0.60 x 0.10 = 1623

Volume for : LOS  
 4-lane highway = 1623 vph/2 lanes = 811 vphpl B  
 6-lane highway = 1623 vph/3 lanes = 541 vphpl B

LEVEL OF SERVICE

		Free-Flow Speed = 60 mph					Free-Flow Speed = 50 mph				
		Percent Trucks					Percent Trucks				
	LOS	0	5	10	15	20	0	5	10	15	20
Terrain Level	A	560	550	530	520	510	440	430	420	410	400
	B	920	900	870	850	840	710	700	680	660	650
	C	1310	1280	1250	1220	1190	1030	1000	980	960	940
	D	1680	1640	1600	1570	1530	1350	1320	1290	1260	1230
	E	1870	1820	1780	1740	1700	1610	1570	1530	1500	1460
Rolling	A	560	520	490	460	430	440	410	380	360	340
	B	920	850	800	750	710	710	660	620	580	550
	C	1310	1220	1140	1070	1010	1030	960	900	840	790
	D	1680	1570	1470	1380	1300	1350	1260	1180	1100	1040
	E	1870	1740	1620	1520	1440	1610	1500	1400	1310	1240
Mountain	A	560	480	420	370	330	440	370	320	290	260

B	920	780	680	600	540	710	610	530	470	420
C	1310	1120	970	860	770	1030	880	760	680	610
D	1680	1430	1250	1100	990	1350	1150	1000	890	800
E	1870	1590	1380	1220	1100	1610	1370	1190	1050	950

Assumptions: highway with 60 mi/h FFS has 8 access points/mi; highway with 50 mi/h FFS has 25 access points/mi; lane width = 12 ft; shoulder width > 6 ft; divided highway; PHF = 0.88; all heavy vehicles are trucks and regular commuters

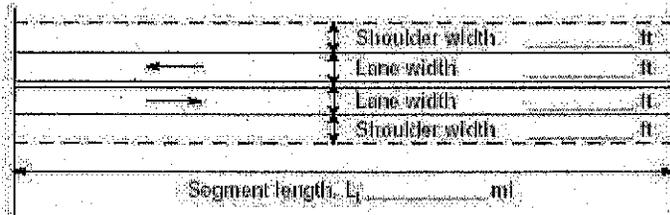
**APPENDIX M2**  
**LEVEL OF SERVICE ANALYSIS –**  
**EXISTING PLUS CONSTRUCTION PLUS DETOUR CONDITIONS**

## TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	NSA	Highway	Delevan Road
Agency or Company	County of Colusa	From/To	
Date Performed	8/23/2006	Jurisdiction	Colusa County
Analysis Time Period	Peak Hour	Analysis Year	Existing + Detour + Const. Con

Project Description: *Colusa Power Plant*

**Input Data**



	<input type="checkbox"/> Class I highway	<input checked="" type="checkbox"/> Class II highway
	Terrain	<input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling
Two-way hourly volume		360 veh/h
Directional split		60 / 40
Peak-hour factor, PHF		0.92
No-passing zone		0
% Trucks and Buses, P <sub>T</sub>		10 %
% Recreational vehicles, P <sub>R</sub>		0%
Access points/ mi		10

**Average Travel Speed**

Grade adjustment factor, f <sub>G</sub> (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-9)	1.7
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))	0.935
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )	419
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)	251
Free-Flow Speed from Field Measurement	Estimated Free-Flow Speed
Field Measured speed, S <sub>FM</sub> <span style="float: right;">ml/h</span>	Base free-flow speed, BFFS <sub>FM</sub> <span style="float: right;">45.0 ml/h</span>
Observed volume, V <sub>f</sub> <span style="float: right;">veh/h</span>	Adj. for lane width and shoulder width <sup>3</sup> , f <sub>LS</sub> (Exhibit 20-5) <span style="float: right;">4.2 ml/h</span>
Free-flow speed, FFS FFS = S <sub>FM</sub> + 0.00776(V <sub>f</sub> / f <sub>HV</sub> ) <span style="float: right;">ml/h</span>	Adj. for access points, f <sub>A</sub> (Exhibit 20-6) <span style="float: right;">2.5 ml/h</span>
	Free-flow speed, FFS (FFS = BFFS - f <sub>LS</sub> - f <sub>A</sub> ) <span style="float: right;">38.3 ml/h</span>
Adj. for no-passing zones, f <sub>np</sub> (ml/h) (Exhibit 20-11)	0.0
Average travel speed, ATS (ml/h) ATS = FFS - 0.00776v <sub>p</sub> - f <sub>np</sub>	35.0

**Percent Time-Spent-Following**

Grade Adjustment factor, f <sub>G</sub> (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))	0.990
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )	395
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)	237
Base percent time-spent-following, BPTSF(%) = 100(1 - e <sup>-0.000879v<sub>p</sub></sup> )	29.3
Adj. for directional distribution and no-passing zone, f <sub>d/np</sub> (%) (Exh. 20-12)	0.5
Percent time-spent-following, PTSF(%) = BPTSF + f <sub>d/np</sub>	29.9

**Level of Service and Other Performance Measures**

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	A
Volume to capacity ratio, v/c = V <sub>p</sub> / 3,200	0.13
Peak 15-min veh-miles of travel, VMT <sub>15</sub> (veh-mi) = 0.25L <sub>s</sub> (V/PHF)	98

Peak-hour vehicle-miles of travel, $VMT_{60}(\text{veh-m})=V \cdot L_t$	360
Peak 15-min total travel time, $TT_{15}(\text{veh-h})=VMT_{15}/ATS$	2.8
<b>Notes</b>	
1. If $V_p \geq 3,200$ pc/h, terminate analysis-the LOS is F. 2. If highest directional split $V_p \geq 1,700$ pc/h, terminated anlysis-the LOS is F.	

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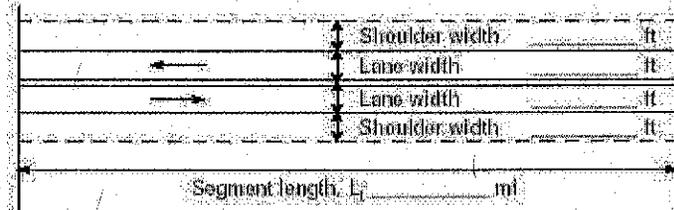
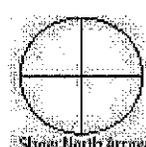
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## TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	NSA	Highway	Road 68
Agency or Company	County of Colusa	From/To	
Date Performed	8/23/2006	Jurisdiction	Colusa County
Analysis Time Period	Peak Hour	Analysis Year	Existing + Detour + Const Cond

Project Description: Colusa Power Plant

Input Data	
	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input checked="" type="checkbox"/> Class I highway    <input type="checkbox"/> Class II highway                  Terrain    <input checked="" type="checkbox"/> Level    <input type="checkbox"/> Rolling                  Two-way hourly volume    331 veh/h                  Directional split    60 / 40                  Peak-hour factor, PHF    0.92                  No-passing zone    0                  % Trucks and Buses, P<sub>T</sub>    10 %                  % Recreational vehicles, P<sub>R</sub>    0%                  Access points/ mi    10             </div> <div style="width: 45%; text-align: center;">  </div> </div>

Average Travel Speed	
Grade adjustment factor, f <sub>G</sub> (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-9)	1.7
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))	0.935
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )	385
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)	231
Free-Flow Speed from Field Measurement	Estimated Free-Flow Speed
Field Measured speed, S <sub>FM</sub> mi/h	Base free-flow speed, BFFS <sub>FM</sub> 60.0 mi/h
Observed volume, V <sub>f</sub> veh/h	Adj. for lane width and shoulder width <sup>3</sup> , f <sub>LS</sub> (Exhibit 20-5)    4.2 mi/h
Free-flow speed, FFS    FFS = S <sub>FM</sub> + 0.00776(V <sub>f</sub> /f <sub>HV</sub> )    mi/h	Adj. for access points, f <sub>A</sub> (Exhibit 20-6)    2.5 mi/h
	Free-flow speed, FFS (FFS = BFFS * f <sub>LS</sub> * f <sub>A</sub> )    53.3 mi/h
Adj. for no-passing zones, f <sub>np</sub> (mi/h) (Exhibit 20-11)	0.0
Average travel speed, ATS (mi/h)    ATS = FFS * 0.00776 v <sub>p</sub> / f <sub>np</sub>	50.3

Percent Time-Spent-Following	
Grade Adjustment factor, f <sub>G</sub> (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))	0.990
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )	363
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)	218
Base percent time-spent-following, BPTSF(%) = 100(1 - e <sup>-0.000879v<sub>p</sub></sup> )	27.3
Adj. for directional distribution and no-passing zone, f <sub>d/np</sub> (%) (Exh. 20-12)	0.7
Percent time-spent-following, PTSF(%) = BPTSF * f <sub>d/np</sub>	28.0

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	B
Volume to capacity ratio, v/c = V <sub>p</sub> / 3,200	0.12
Peak 15-min veh-miles of travel, VMT <sub>15</sub> (veh-mi) = 0.25L <sub>p</sub> (V/PHF)	90

Peak-hour vehicle-miles of travel, $VMT_{60}(\text{veh-m})=V*L_t$	331
Peak 15-min total travel time, $TT_{15}(\text{veh-h})=VMT_{15}/ATS$	1.8
<b>Notes</b>	
1. If $V_p \geq 3,200$ pc/h, terminate analysis-the LOS is F. 2. If highest directional split $V_p \geq 1,700$ pc/h, terminated analysis-the LOS is F.	

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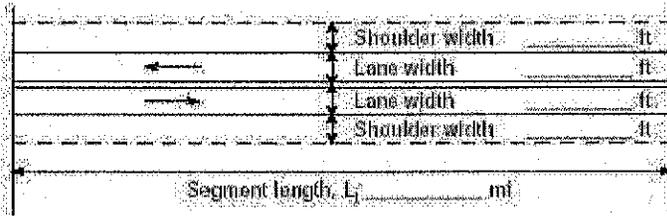
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## TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	NSA	Highway	Old 99W
Agency or Company	County of Colusa	From/To	
Date Performed	8/23/2006	Jurisdiction	Colusa County
Analysis Time Period	Peak Hour	Analysis Year	Existing + Detour + Const Cond

Project Description: Colusa Power Plant

**Input Data**



<p>Show North Arrow</p>	<input checked="" type="checkbox"/> Class I highway	<input type="checkbox"/> Class II highway
	Terrain	<input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling
	Two-way hourly volume	414 veh/h
	Directional split	60 / 40
	Peak-hour factor, PHF	0.92
	No-passing zone	0
	% Trucks and Buses, P <sub>T</sub>	10 %
	% Recreational vehicles, P <sub>R</sub>	0%
	Access points/ ml	10

**Average Travel Speed**

Grade adjustment factor, f <sub>G</sub> (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-9)	1.7
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))	0.935
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )	481
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)	289
Free-Flow Speed from Field Measurement	Estimated Free-Flow Speed
Field Measured speed, S <sub>FM</sub> <span style="float: right;">mi/h</span>	Base free-flow speed, BFFS <sub>FM</sub> <span style="float: right;">60.0 mi/h</span>
Observed volume, V <sub>f</sub> <span style="float: right;">veh/h</span>	Adj. for lane width and shoulder width <sup>3</sup> , f <sub>LS</sub> (Exhibit 20-5) <span style="float: right;">4.2 mi/h</span>
Free-flow speed, FFS = S <sub>FM</sub> + 0.00776(V <sub>f</sub> /f <sub>HV</sub> ) <span style="float: right;">mi/h</span>	Adj. for access points, f <sub>A</sub> (Exhibit 20-6) <span style="float: right;">2.5 mi/h</span>
	Free-flow speed, FFS (FSS = BFFS - f <sub>LS</sub> - f <sub>A</sub> ) <span style="float: right;">53.3 mi/h</span>
Adj. for no-passing zones, f <sub>np</sub> (mi/h) (Exhibit 20-11)	0.0
Average travel speed, ATS (mi/h) ATS = FFS - 0.00776v <sub>p</sub> - f <sub>np</sub>	49.6

**Percent Time-Spent-Following**

Grade Adjustment factor, f <sub>G</sub> (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))	0.990
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )	454
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)	272
Base percent time-spent-following, BPTSF(%) = 100(1 - e <sup>-0.000879v<sub>p</sub></sup> )	32.9
Adj. for directional distribution and no-passing zone, f <sub>d/np</sub> (%) (Exh. 20-12)	0.4
Percent time-spent-following, PTSF(%) = BPTSF + f <sub>d/np</sub>	33.3

**Level of Service and Other Performance Measures**

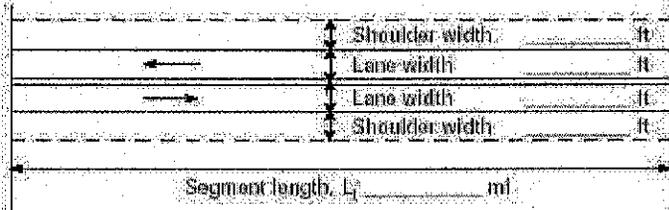
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	C
Volume to capacity ratio, v/c = V <sub>p</sub> / 3,200	0.15
Peak 15-min veh-miles of travel, VMT <sub>15</sub> (veh-m) = 0.25L <sub>t</sub> (V/PHF)	112

Peak-hour vehicle-miles of travel, $VMT_{60}(\text{veh-m})=V*L_t$	414
Peak 15-min total travel time, $TT_{15}(\text{veh-h})=VMT_{15}/ATS$	2.3
<b>Notes</b>	
1. If $V_p \geq 3,200$ pc/h, terminate analysis-the LOS is F. 2. If highest directional split $V_p \geq 1,700$ pc/h, terminated analysis-the LOS is F.	

## TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	NSA	Highway	McDermott Road
Agency or Company	County of Colusa	From/To	North of Teresa Creek Bridge
Date Performed	8/23/2006	Jurisdiction	Colusa County
Analysis Time Period	Peak Hour	Analysis Year	Existing + Detour + Const Cond

Project Description: Colusa Power Plant

Input Data																			
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td><input checked="" type="checkbox"/> Class I highway</td> <td><input checked="" type="checkbox"/> Class II highway</td> </tr> <tr> <td>Terrain <input checked="" type="checkbox"/> Level</td> <td><input type="checkbox"/> Rolling</td> </tr> <tr> <td>Two-way hourly volume</td> <td>323 veh/h</td> </tr> <tr> <td>Directional split</td> <td>60 / 40</td> </tr> <tr> <td>Peak-hour factor, PHF</td> <td>0.92</td> </tr> <tr> <td>No-passing zone</td> <td>0</td> </tr> <tr> <td>% Trucks and Buses, P<sub>T</sub></td> <td>10 %</td> </tr> <tr> <td>% Recreational vehicles, P<sub>R</sub></td> <td>0%</td> </tr> <tr> <td>Access points/ mi</td> <td>10</td> </tr> </table>	<input checked="" type="checkbox"/> Class I highway	<input checked="" type="checkbox"/> Class II highway	Terrain <input checked="" type="checkbox"/> Level	<input type="checkbox"/> Rolling	Two-way hourly volume	323 veh/h	Directional split	60 / 40	Peak-hour factor, PHF	0.92	No-passing zone	0	% Trucks and Buses, P <sub>T</sub>	10 %	% Recreational vehicles, P <sub>R</sub>	0%	Access points/ mi	10
<input checked="" type="checkbox"/> Class I highway	<input checked="" type="checkbox"/> Class II highway																		
Terrain <input checked="" type="checkbox"/> Level	<input type="checkbox"/> Rolling																		
Two-way hourly volume	323 veh/h																		
Directional split	60 / 40																		
Peak-hour factor, PHF	0.92																		
No-passing zone	0																		
% Trucks and Buses, P <sub>T</sub>	10 %																		
% Recreational vehicles, P <sub>R</sub>	0%																		
Access points/ mi	10																		

Average Travel Speed	
Grade adjustment factor, f <sub>G</sub> (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-9)	1.7
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))	0.935
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )	376
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)	226
Free-Flow Speed from Field Measurement	Estimated Free-Flow Speed
Field Measured speed, S <sub>FM</sub> (ml/h)	Base free-flow speed, BFFS <sub>FM</sub> 45.0 ml/h
Observed volume, V <sub>f</sub> (veh/h)	Adj. for lane width and shoulder width <sup>3</sup> , f <sub>LS</sub> (Exhibit 20-5) 4.2 ml/h
Free-flow speed, FFS FFS = S <sub>FM</sub> + 0.00776(V <sub>f</sub> /f <sub>HV</sub> ) (ml/h)	Adj. for access points, f <sub>A</sub> (Exhibit 20-8) 2.5 ml/h
	Free-flow speed, FFS (FSS = BFFS * f <sub>LS</sub> * f <sub>A</sub> ) 38.3 ml/h
Adj. for no-passing zones, f <sub>np</sub> (ml/h) (Exhibit 20-11)	0.0
Average travel speed, ATS (ml/h) ATS = FFS - 0.00776v <sub>p</sub> * f <sub>np</sub>	35.4

Percent Time-Spent-Following	
Grade Adjustment factor, f <sub>G</sub> (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))	0.990
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )	355
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)	213
Base percent time-spent-following, BPTSF(%) = 100(1 - e <sup>-0.000879v<sub>p</sub></sup> )	26.8
Adj. for directional distribution and no-passing zone, f <sub>d/np</sub> (%)(Exh. 20-12)	0.7
Percent time-spent-following, PTSF(%) = BPTSF * f <sub>d/np</sub>	27.6

Level of Service and Other Performance Measures	
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	A
Volume to capacity ratio, v/c = V <sub>p</sub> / 3,200	0.12
Peak 15-min veh-miles of travel, VMT <sub>15</sub> (veh-mi) = 0.25L <sub>t</sub> (V/PHF)	88

Peak-hour vehicle-miles of travel, $VMT_{60}(\text{veh-mi})=V \cdot L_t$	323
Peak 15-min total travel time, $TT_{15}(\text{veh-h})=VMT_{15}/ATS$	2.5
<b>Notes</b>	
1. If $V_p \geq 3,200$ pc/h, terminate analysis-the LOS is F.	
2. If highest directional split $V_p \geq 1,700$ pc/h, terminated analysis-the LOS is F.	

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PLANNING ANALYSIS

Analyst: NSA  
 Agency/Co: County of Colusa  
 Date: 8/23/2006  
 Analysis Period: Peak Hour  
 Highway: Interstate 5  
 From/To: North of Road 68  
 Jurisdiction: Colusa County  
 Analysis Year: Existing Conditions  
 Project ID: Colusa Power Plant

INPUT DATA

Total AADT volume, AADT 27000 vpd  
 Proportion AADT during peak hour, K 0.10  
 Percent peak-hour traffic in heaviest direction, D 60 %  
 Trucks 10 %  
 Terrain type Level  
 Base free-flow speed, BFFS 60.0 mph

ANALYSIS

DDHV = AADT x D x K  
 DDHV = 27000 x 0.60 x 0.10 = 1620

Volume for : LOS  
 4-lane highway = 1620 vph/2 lanes = 810 vphpl B  
 6-lane highway = 1620 vph/3 lanes = 540 vphpl B

LEVEL OF SERVICE

		Free-Flow Speed = 60 mph					Free-Flow Speed = 50 mph				
		Percent Trucks					Percent Trucks				
Terrain	LOS	0	5	10	15	20	0	5	10	15	20
Level	A	560	550	530	520	510	440	430	420	410	400
	B	920	900	870	850	840	710	700	680	660	650
	C	1310	1280	1250	1220	1190	1030	1000	980	960	940
	D	1680	1640	1600	1570	1530	1350	1320	1290	1260	1230
	E	1870	1820	1780	1740	1700	1610	1570	1530	1500	1460
Rolling	A	560	520	490	460	430	440	410	380	360	340
	B	920	850	800	750	710	710	660	620	580	550
	C	1310	1220	1140	1070	1010	1030	960	900	840	790
	D	1680	1570	1470	1380	1300	1350	1260	1180	1100	1040
	E	1870	1740	1620	1520	1440	1610	1500	1400	1310	1240
Mountain	A	560	480	420	370	330	440	370	320	290	260

B	920	780	680	600	540	710	610	530	470	420
C	1310	1120	970	860	770	1030	880	760	680	610
D	1680	1430	1250	1100	990	1350	1150	1000	890	800
E	1870	1590	1380	1220	1100	1610	1370	1190	1050	950

Assumptions: highway with 60 mi/h FFS has 8 access points/mi; highway with 50 mi/h FFS has 25 access points/mi; lane width = 12 ft; shoulder width > 6 ft; divided highway; PHF = 0.88; all heavy vehicles are trucks and regular commuters

Phone:  
E-mail:

Fax:

PLANNING ANALYSIS

Analyst: NSA  
 Agency/Co: County of Colusa  
 Date: 8/23/2006  
 Analysis Period: Peak Hour  
 Highway: Interstate 5  
 From/To: South of Road 68  
 Jurisdiction: Colusa County  
 Analysis Year: Existing + Detour + Const Cond  
 Project ID: Colusa Power Plant

INPUT DATA

Total AADT volume, AADT 27100 vpd  
 Proportion AADT during peak hour, K 0.10  
 Percent peak-hour traffic in heaviest direction, D 60 %  
 Trucks 10 %  
 Terrain type Level  
 Base free-flow speed, BFFS 60.0 mph

ANALYSIS

DDHV = AADT x D x K  
 DDHV = 27100 x 0.60 x 0.10 = 1626

Volume for : LOS  
 4-lane highway = 1626 vph/2 lanes = 813 vphpl B  
 6-lane highway = 1626 vph/3 lanes = 542 vphpl B

LEVEL OF SERVICE

Free-Flow Speed = 60 mph						Free-Flow Speed = 50 mph					
Terrain Level	LOS	Percent Trucks					Percent Trucks				
		0	5	10	15	20	0	5	10	15	20
Terrain Level	A	560	550	530	520	510	440	430	420	410	400
	B	920	900	870	850	840	710	700	680	660	650
	C	1310	1280	1250	1220	1190	1030	1000	980	960	940
	D	1680	1640	1600	1570	1530	1350	1320	1290	1260	1230
	E	1870	1820	1780	1740	1700	1610	1570	1530	1500	1460
Rolling	A	560	520	490	460	430	440	410	380	360	340
	B	920	850	800	750	710	710	660	620	580	550
	C	1310	1220	1140	1070	1010	1030	960	900	840	790
	D	1680	1570	1470	1380	1300	1350	1260	1180	1100	1040
	E	1870	1740	1620	1520	1440	1610	1500	1400	1310	1240
Mountain	A	560	480	420	370	330	440	370	320	290	260

B	920	780	680	600	540	710	610	530	470	420
C	1310	1120	970	860	770	1030	880	760	680	610
D	1680	1430	1250	1100	990	1350	1150	1000	890	800
E	1870	1590	1380	1220	1100	1610	1370	1190	1050	950

Assumptions: highway with 60 mi/h FFS has 8 access points/mi; highway with 50 mi/h FFS has 25 access points/mi; lane width = 12 ft; shoulder width > 6 ft; divided highway; PHF = 0.88; all heavy vehicles are trucks and regular commuters

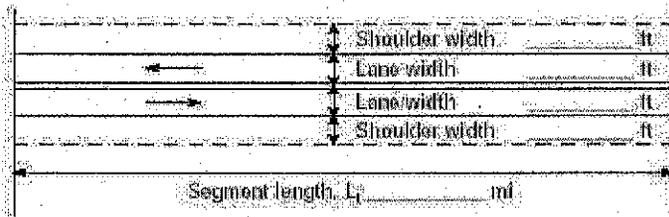
**APPENDIX M3**  
**LEVEL OF SERVICE ANALYSIS –**  
**EXISTING PLUS OPERATIONS CONDITIONS**

## TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	NSA	Highway	Delevan Road
Agency or Company	County of Colusa	From/To	
Date Performed	8/23/2006	Jurisdiction	Colusa County
Analysis Time Period	Peak Hour	Analysis Year	Exist + Detour + Const + Oper

Project Description: Colusa Power Plant

**Input Data**



<input checked="" type="checkbox"/> Class I highway	<input checked="" type="checkbox"/> Class II highway
Terrain	<input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling
Two-way hourly volume	378 veh/h
Directional split	60 / 40
Peak-hour factor, PHF	0.92
No-passing zone	0
% Trucks and Buses, P <sub>T</sub>	10 %
% Recreational vehicles, P <sub>R</sub>	0%
Access points/ mi	10

**Average Travel Speed**

Grade adjustment factor, f <sub>G</sub> (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-8)	1.7
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))	0.936
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )	440
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)	264
Free-Flow Speed from Field Measurement	Estimated Free-Flow Speed
Field Measured speed, S <sub>FM</sub> (mi/h)	Base free-flow speed, BFFS <sub>FM</sub> 45.0 mi/h
Observed volume, V <sub>f</sub> (veh/h)	Adj. for lane width and shoulder width <sup>3</sup> , f <sub>LS</sub> (Exhibit 20-5) 4.2 mi/h
Free-flow speed, FFS = S <sub>FM</sub> + 0.00776(V <sub>f</sub> /f <sub>HV</sub> ) (mi/h)	Adj. for access points, f <sub>A</sub> (Exhibit 20-6) 2.5 mi/h
	Free-flow speed, FFS (FFS = BFFS - f <sub>LS</sub> - f <sub>A</sub> ) 38.3 mi/h
Adj. for no-passing zones, f <sub>np</sub> (mi/h) (Exhibit 20-11)	0.0
Average travel speed, ATS (mi/h) ATS = FFS - 0.00776v <sub>p</sub> - f <sub>np</sub>	34.9

**Percent Time-Spent-Following**

Grade Adjustment factor, f <sub>G</sub> (Exhibit 20-8)	1.00
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-10)	1.1
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))	0.990
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )	415
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)	249
Base percent time-spent-following, BPTSF(%) = 100(1 - e <sup>-0.000879v<sub>p</sub></sup> )	30.6
Adj. for directional distribution and no-passing zone, f <sub>d/np</sub> (%) (Exh. 20-12)	0.5
Percent time-spent-following, PTSF(%) = BPTSF + f <sub>d/np</sub>	31.0

**Level of Service and Other Performance Measures**

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	A
Volume to capacity ratio, v/c = V <sub>p</sub> / 3,200	0.14
Peak 15-min veh-miles of travel, VMT <sub>15</sub> (veh-mi) = 0.25L <sub>s</sub> (V/PHF)	103

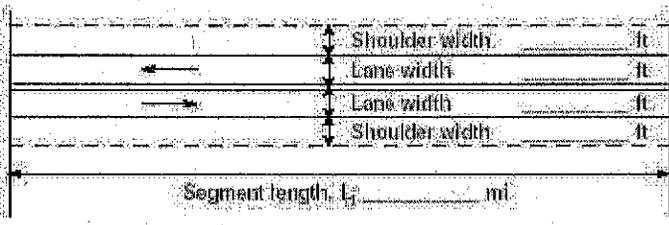
Peak-hour vehicle-miles of travel, $VMT_{60}(\text{veh-mi})=V \cdot L_t$	378
Peak 15-min total travel time, $TT_{15}(\text{veh-h})=VMT_{15}/ATS$	3.0
<b>Notes</b>	
1. If $V_p \geq 3,200$ pc/h, terminate analysis-the LOS is F. 2. If highest directional split $V_p \geq 1,700$ pc/h, terminated anlysis-the LOS is F.	

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## TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

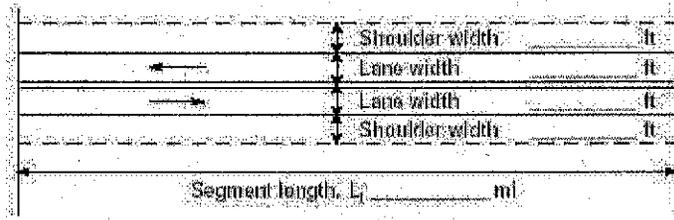
General Information		Site Information	
Analyst	NSA	Highway	Delevan Road
Agency or Company	County of Colusa	From/To	
Date Performed	8/23/2006	Jurisdiction	Colusa County
Analysis Time Period	Peak Hour	Analysis Year	Existing + Operations Cond
Project Description: Colusa Power Plant			
Input Data			
		<input checked="" type="checkbox"/> Class I highway <input checked="" type="checkbox"/> Class II highway Terrain <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling Two-way hourly volume    55 veh/h Directional split    60 / 40 Peak-hour factor, PHF    0.92 No-passing zone    0 % Trucks and Buses, P <sub>T</sub> 10 % % Recreational vehicles, P <sub>R</sub> 0 % Access points/ mi    10	
Average Travel Speed			
Grade adjustment factor, f <sub>G</sub> (Exhibit 20-7)		1.00	
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-9)		1.7	
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-9)		1.0	
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))		0.935	
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )		64	
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)		38	
Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S <sub>FM</sub> ml/h		Base free-flow speed, BFFS <sub>FM</sub>	45.0 ml/h
Observed volume, V <sub>f</sub> veh/h		Adj. for lane width and shoulder width <sup>3</sup> , f <sub>LS</sub> (Exhibit 20-5)	4.2 ml/h
Free-flow speed, FFS = S <sub>FM</sub> + 0.00776(V <sub>f</sub> / f <sub>HV</sub> )    ml/h		Adj. for access points, f <sub>A</sub> (Exhibit 20-6)	2.5 ml/h
		Free-flow speed, FFS (FSS = BFFS - f <sub>LS</sub> - f <sub>A</sub> )	38.3 ml/h
Adj. for no-passing zones, f <sub>np</sub> ( ml/h) (Exhibit 20-11)		0.0	
Average travel speed, ATS ( ml/h) ATS = FFS - 0.00776v <sub>p</sub> - f <sub>np</sub>		37.8	
Percent Time Spent Following			
Grade Adjustment factor, f <sub>G</sub> (Exhibit 20-8)		1.00	
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-10)		1.1	
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-10)		1.0	
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))		0.990	
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )		60	
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)		36	
Base percent time-spent-following, BPTSF(%) = 100(1 - e <sup>-0.000879v<sub>p</sub></sup> )		5.1	
Adj. for directional distribution and no-passing zone, f <sub>d/np</sub> (%) (Exh. 20-12)		2.4	
Percent time-spent-following, PTSF(%) = BPTSF + f <sub>d/np</sub>		7.5	
Level of Service and Other Performance Measures			
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)		A	
Volume to capacity ratio, v/c = V <sub>p</sub> / 3,200		0.02	
Peak 15-min veh-miles of travel, VMT <sub>15</sub> (veh - mi) = 0.25L <sub>t</sub> (V/PHF)		15	

Peak-hour vehicle-miles of travel, $VMT_{60}(\text{veh} \cdot \text{mi}) = V \cdot L_t$	55
Peak 15-min total travel time, $TT_{15}(\text{veh} \cdot \text{h}) = VMT_{15}/ATS$	0.4
<b>Notes</b>	
1. If $V_p \geq 3,200$ pc/h, terminate analysis-the LOS is F. 2. If highest directional split $V_p \geq 1,700$ pc/h, terminated anlysis-the LOS is F.	

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<b>TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET</b>			
<b>General Information</b>		<b>Site Information</b>	
Analyst	NSA	Highway	McDermott Road
Agency or Company	County of Colusa	From/To	
Date Performed	8/23/2006	Jurisdiction	Colusa County
Analysis Time Period	Peak Hour	Analysis Year	Existing + Operations Cond
Project Description: Colusa Power Plant			
<b>Input Data</b>			
		<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Class I highway    <input checked="" type="checkbox"/> Class II highway             </div> <div style="width: 45%;">                 Terrain    <input checked="" type="checkbox"/> Level    <input type="checkbox"/> Rolling             </div> </div> <p>Two-way hourly volume    36 veh/h                  Directional split    60 / 40                  Peak-hour factor, PHF    0.92                  No-passing zone    0                  % Trucks and Buses, P<sub>T</sub>    10 %                  % Recreational vehicles, P<sub>R</sub>    0 %                  Access points/ ml    10</p>	
<b>Average Travel Speed</b>			
Grade adjustment factor, f <sub>G</sub> (Exhibit 20-7)		1.00	
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-9)		1.7	
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-9)		1.0	
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))		0.935	
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )		42	
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)		25	
Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field Measured speed, S <sub>FM</sub> ml/h		Base free-flow speed, BFFS <sub>FM</sub>	45.0 ml/h
Observed volume, V <sub>f</sub> veh/h		Adj. for lane width and shoulder width <sup>3</sup> , f <sub>LS</sub> (Exhibit 20-5)	4.2 ml/h
Free-flow speed, FFS = S <sub>FM</sub> + 0.00776(V <sub>f</sub> /f <sub>HV</sub> )    ml/h		Adj. for access points, f <sub>A</sub> (Exhibit 20-6)	2.5 ml/h
		Free-flow speed, FFS (FFS = BFFS - f <sub>LS</sub> - f <sub>A</sub> )	38.3 ml/h
Adj. for no-passing zones, f <sub>np</sub> (ml/h) (Exhibit 20-11)		0.0	
Average travel speed, ATS (ml/h) ATS = FFS - 0.00776v <sub>p</sub> f <sub>np</sub>		38.0	
<b>Percent Time-Spent-Following</b>			
Grade Adjustment factor, f <sub>G</sub> (Exhibit 20-8)		1.00	
Passenger-car equivalents for trucks, E <sub>T</sub> (Exhibit 20-10)		1.1	
Passenger-car equivalents for RVs, E <sub>R</sub> (Exhibit 20-10)		1.0	
Heavy-vehicle adjustment factor, f <sub>HV</sub> = 1 / (1 + P <sub>T</sub> (E <sub>T</sub> -1) + P <sub>R</sub> (E <sub>R</sub> -1))		0.990	
Two-way flow rate <sup>1</sup> , v <sub>p</sub> (pc/h) = V / (PHF * f <sub>G</sub> * f <sub>HV</sub> )		40	
v <sub>p</sub> * highest directional split proportion <sup>2</sup> (pc/h)		24	
Base percent time-spent-following, BPTSF(%) = 100(1 - e <sup>-0.000879v<sub>p</sub></sup> )		3.5	
Adj. for directional distribution and no-passing zone, f <sub>d/np</sub> (%) (Exh. 20-12)		2.5	
Percent time-spent-following, PTSF(%) = BPTSF + f <sub>d/np</sub>		5.9	
<b>Level of Service and Other Performance Measures</b>			
Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)		A	
Volume to capacity ratio, v/c = V <sub>p</sub> / 3,200		0.01	
Peak 15-min veh-miles of travel, VMT <sub>15</sub> (veh-ml) = 0.25L <sub>p</sub> (V/PHF)		10	

Peak-hour vehicle-miles of travel, $VMT_{60}(\text{veh-m})=V \cdot L_t$	36
Peak 15-min total travel time, $TT_{15}(\text{veh-h})=VMT_{15}/ATS$	0.3
<b>Notes</b>	
1. If $V_p \geq 3,200$ pc/h, terminate analysis-the LOS is F.	
2. If highest directional split $V_p \geq 1,700$ pc/h, terminated anlysis-the LOS is F.	

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PLANNING ANALYSIS

Analyst: NSA  
 Agency/Co: County of Colusa  
 Date: 8/23/2006  
 Analysis Period: Peak Hour  
 Highway: Interstate 5  
 From/To: South of Delevan Road  
 Jurisdiction: Colusa County  
 Analysis Year: Existing Conditions  
 Project ID: Colusa Power Plant

INPUT DATA

Total AADT volume, AADT 27100 vpd  
 Proportion AADT during peak hour, K 0.10  
 Percent peak-hour traffic in heaviest direction, D 60 %  
 Trucks 10 %  
 Terrain type Level  
 Base free-flow speed, BFFS 60.0 mph

ANALYSIS

DDHV = AADT x D x K  
 DDHV = 27100 x 0.60 x 0.10 = 1626

Volume for : LOS  
 4-lane highway = 1626 vph/2 lanes = 813 vphpl B  
 6-lane highway = 1626 vph/3 lanes = 542 vphpl B

LEVEL OF SERVICE

Free-Flow Speed = 60 mph						Free-Flow Speed = 50 mph					
Terrain Level	LOS	Percent Trucks					Percent Trucks				
		0	5	10	15	20	0	5	10	15	20
Terrain Level	A	560	550	530	520	510	440	430	420	410	400
	B	920	900	870	850	840	710	700	680	660	650
	C	1310	1280	1250	1220	1190	1030	1000	980	960	940
	D	1680	1640	1600	1570	1530	1350	1320	1290	1260	1230
	E	1870	1820	1780	1740	1700	1610	1570	1530	1500	1460
Rolling	A	560	520	490	460	430	440	410	380	360	340
	B	920	850	800	750	710	710	660	620	580	550
	C	1310	1220	1140	1070	1010	1030	960	900	840	790
	D	1680	1570	1470	1380	1300	1350	1260	1180	1100	1040
	E	1870	1740	1620	1520	1440	1610	1500	1400	1310	1240
Mountain	A	560	480	420	370	330	440	370	320	290	260

B	920	780	680	600	540	710	610	530	470	420
C	1310	1120	970	860	770	1030	880	760	680	610
D	1680	1430	1250	1100	990	1350	1150	1000	890	800
E	1870	1590	1380	1220	1100	1610	1370	1190	1050	950

Assumptions: highway with 60 mi/h FFS has 8 access points/mi; highway with 50 mi/h FFS has 25 access points/mi; lane width = 12 ft; shoulder width > 6 ft; divided highway; PHF = 0.88; all heavy vehicles are trucks and regular commuters