G

2025 CAPACITY ANALYSIS WORKSHEETS

Bay Bridge
2025 Summer Weekend Day
Westbound Analysis

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	10 AM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	2717	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	755	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1067	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1067	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	17.7	pc/mi/ln
Level of service, LOS	B	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	11 AM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	3160	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	878	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1241	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	4.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.8	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	61.2	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1241	pc/h/ln
Free-flow speed, FFS	61.2	mi/h
Average passenger-car speed, S	61.2	mi/h
Number of lanes, N	3	
Density, D	20.3	pc/mi/ln
Level of service, LOS	C	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	12 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	3474	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	965	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1364	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1364	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	22.6	pc/mi/ln
Level of service, LOS	C	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	1 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	3785	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1051	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1486	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1486	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	24.6	pc/mi/ln
Level of service, LOS	C	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	2 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	3749	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1041	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1472	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1472	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	24.4	pc/mi/ln
Level of service, LOS	C	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	3 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	4341	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1206	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1704	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1704	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.3	mi/h
Number of lanes, N	3	
Density, D	28.2	pc/mi/ln
Level of service, LOS	D	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	4PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	4107	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1141	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1612	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1612	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	26.7	pc/mi/ln
Level of service, LOS	D	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	5 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	3658	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1016	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1436	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1436	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	23.8	pc/mi/ln
Level of service, LOS	C	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	6 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	3475	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	965	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1364	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1364	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	22.6	pc/mi/ln
Level of service, LOS	C	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	7 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	2988	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	830	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1173	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1173	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	19.4	pc/mi/ln
Level of service, LOS	C	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	8 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	2520	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	700	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	989	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	4.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.8	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	61.2	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	989	pc/h/ln
Free-flow speed, FFS	61.2	mi/h
Average passenger-car speed, S	61.2	mi/h
Number of lanes, N	3	
Density, D	16.2	pc/mi/ln
Level of service, LOS	B	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	9 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	2104	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	584	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	826	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	826	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	13.7	pc/mi/ln
Level of service, LOS	B	

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

Bay Bridge
2025 Summer Weekend Day
Eastbound Analysis

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	10 AM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	4029	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1119	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2305	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2305	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	11 AM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	4521	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1256	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2587	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2587	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	12 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	4784	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1329	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2738	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2738	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	1 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	4939	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1372	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2826	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2826	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	2 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	5462	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1517	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	3125	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3125	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	3 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	5762	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1601	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	3297	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3297	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	4 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	5703	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1584	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	3263	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3263	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	5 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	5759	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1600	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	3295	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	3295	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	6 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	4517	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1255	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2585	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2585	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	7 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	4147	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1152	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2373	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2373	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	8 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	3983	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1106	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2279	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2279	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	50.8	mi/h
Number of lanes, N	2	
Density, D	44.9	pc/mi/ln
Level of service, LOS	E	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	9 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 SUMMER WEEKEND
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	4048	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1124	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2316	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2316	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

Bay Bridge
2025 Average Weekday
Westbound Analysis

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	10 AM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	2216	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	616	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.877	
Driver population factor, vp	1.00	
Flow rate, vp	936	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	936	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	15.5	pc/mi/ln
Level of service, LOS	B	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	11 AM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	2200	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	611	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.877	
Driver population factor, vp	1.00	
Flow rate, vp	929	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	929	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	15.4	pc/mi/ln
Level of service, LOS	B	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	12 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	2201	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	611	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.877	
Driver population factor, vp	1.00	
Flow rate, vp	929	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	929	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	15.4	pc/mi/ln
Level of service, LOS	B	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	1 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	2166	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	602	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.877	
Driver population factor, vp	1.00	
Flow rate, vp	915	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	915	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	15.1	pc/mi/ln
Level of service, LOS	B	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	2 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	2370	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	658	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.877	
Driver population factor, vp	1.00	
Flow rate, vp	1001	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1001	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	16.6	pc/mi/ln
Level of service, LOS	B	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	3 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	2484	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	690	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.877	
Driver population factor, vp	1.00	
Flow rate, vp	1049	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1049	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	17.4	pc/mi/ln
Level of service, LOS	B	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	4PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	2471	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	686	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.877	
Driver population factor, vp	1.00	
Flow rate, vp	1043	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1043	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	17.3	pc/mi/ln
Level of service, LOS	B	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	5 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	2393	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	665	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.877	
Driver population factor, vp	1.00	
Flow rate, vp	1010	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1010	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	16.7	pc/mi/ln
Level of service, LOS	B	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	6 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description: 3 WB LANES	

Flow Inputs and Adjustments

Volume, V	1925	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	535	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.877	
Driver population factor, vp	1.00	
Flow rate, vp	813	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	813	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	13.5	pc/mi/ln
Level of service, LOS	B	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	7 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	1418	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	394	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.877	
Driver population factor, vp	1.00	
Flow rate, vp	599	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	599	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	9.9	pc/mi/ln
Level of service, LOS	A	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	8 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	1073	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	298	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.877	
Driver population factor, vp	1.00	
Flow rate, vp	453	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	453	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	7.5	pc/mi/ln
Level of service, LOS	A	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	9 PM
Freeway/Direction:	BAY BRIDGE WESTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	3 WB LANES

Flow Inputs and Adjustments

Volume, V	872	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	242	v
Trucks and buses	14	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.877	
Driver population factor, vp	1.00	
Flow rate, vp	368	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	368	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	6.1	pc/mi/ln
Level of service, LOS	A	

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

Bay Bridge
2025 Average Weekday
Eastbound Analysis

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	10 AM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	2136	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	593	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	1.00	
Flow rate, vp	1276	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1276	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	11 AM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	2159	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	600	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	1.00	
Flow rate, vp	1289	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1289	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	22.2	pc/mi/ln
Level of service, LOS	C	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	12 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	2263	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	629	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	1.00	
Flow rate, vp	1352	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1352	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	23.3	pc/mi/ln
Level of service, LOS	C	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	1 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	2210	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	614	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	1.00	
Flow rate, vp	1320	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1320	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	22.7	pc/mi/ln
Level of service, LOS	C	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	2 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	2580	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	717	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	1.00	
Flow rate, vp	1541	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1541	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	26.5	pc/mi/ln
Level of service, LOS	D	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	3 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	3402	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	945	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	1.00	
Flow rate, vp	2032	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2032	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	56.1	mi/h
Number of lanes, N	2	
Density, D	36.2	pc/mi/ln
Level of service, LOS	E	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	4 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	4170	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1158	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	1.00	
Flow rate, vp	2490	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2490	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	5 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	4189	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1164	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	1.00	
Flow rate, vp	2502	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2502	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	6 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	3520	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	978	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	1.00	
Flow rate, vp	2102	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2102	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	55.0	mi/h
Number of lanes, N	2	
Density, D	38.2	pc/mi/ln
Level of service, LOS	E	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	7 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	2130	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	592	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	1.00	
Flow rate, vp	1272	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1272	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	21.9	pc/mi/ln
Level of service, LOS	C	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	8 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	1579	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	439	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	1.00	
Flow rate, vp	943	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	943	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	16.2	pc/mi/ln
Level of service, LOS	B	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	BKA
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	9 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND SPAN
From/To:	
Jurisdiction:	
Analysis Year:	2025 WEEKDAY
Description:	2 EB LANES

Flow Inputs and Adjustments

Volume, V	1437	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	399	v
Trucks and buses	15	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.930	
Driver population factor, vp	1.00	
Flow rate, vp	858	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	858	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	14.8	pc/mi/ln
Level of service, LOS	B	

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

Bay Bridge
2025 Summer Weekend Day
Reversible Lane Operation
Westbound Analysis

HCS2000: Multilane Highways Release 4.1a

OPERATIONAL ANALYSIS

Analyst: BA
Agency/Co: Parsons
Date: 8/18/02
Analsis Period: 10 AM
Highway: BAY BRIDGE WESTBOUND SPAN
From/To:
Jurisdiction:
Analysis Year: 2025 SUMMER WEEKEND
Project ID: REVERSIBLE LANE OPERATION - 2 WB Lanes

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	2.0	ft	2.0	ft
Left edge	6.0	ft	2.0	ft
Total lateral clearance	8.0	ft	4.0	ft
Access points per mile	0		0	
Median type	Undivided			
Free-flow speed:	Base		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.9	mph	1.8	mph
Median type adjustment, FM	1.6	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	57.5	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	2717	vph	0	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	755		0	
Trucks and buses	6	%	6	%
Recreational vehicles	0	%	0	%
Terrain type	Grade		Grade	
Grade	3.50	%	3.00	%
Segment length	0.60	mi	0.70	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.0		1.5	
Recreational vehicles PCE, ER	3.0		3.0	
Heavy vehicle adjustment, fHV	0.943		0.971	
Flow rate, vp	1600	pcphpl	0	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1600	pcphpl	0	pcphpl
Free-flow speed, FFS	57.5	mph	60.0	mph
Avg. passenger-car travel speed, S	56.8	mph	60.0	mph
Level of service, LOS	D		A	
Density, D	28.2	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS2000: Multilane Highways Release 4.1a

OPERATIONAL ANALYSIS

Analyst: BA
Agency/Co: Parsons
Date: 8/18/02
Analsis Period: 11 AM
Highway: BAY BRIDGE WESTBOUND SPAN
From/To:
Jurisdiction:
Analysis Year: 2025 SUMMER WEEKEND
Project ID: REVERSIBLE LANE OPERATION - 2 WB Lanes

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	2.0	ft	2.0	ft
Left edge	6.0	ft	2.0	ft
Total lateral clearance	8.0	ft	4.0	ft
Access points per mile	0		0	
Median type	Undivided			
Free-flow speed:	Base		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.9	mph	1.8	mph
Median type adjustment, FM	1.6	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	57.5	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	3160	vph	0	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	878		0	
Trucks and buses	6	%	6	%
Recreational vehicles	0	%	0	%
Terrain type	Grade		Grade	
Grade	3.50	%	3.00	%
Segment length	0.60	mi	0.70	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.0		1.5	
Recreational vehicles PCE, ER	3.0		3.0	
Heavy vehicle adjustment, fHV	0.943		0.971	
Flow rate, vp	1860	pcphpl	0	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1860	pcphpl	0	pcphpl
Free-flow speed, FFS	57.5	mph	60.0	mph
Avg. passenger-car travel speed, S	55.4	mph	60.0	mph
Level of service, LOS	D		A	
Density, D	33.6	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS2000: Multilane Highways Release 4.1a

OPERATIONAL ANALYSIS

Analyst: BA
Agency/Co: Parsons
Date: 8/18/02
Analsis Period: 12 PM
Highway: BAY BRIDGE WESTBOUND SPAN
From/To:
Jurisdiction:
Analysis Year: 2025 SUMMER WEEKEND
Project ID: REVERSIBLE LANE OPERATION - 2 WB Lanes

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	2.0	ft	2.0	ft
Left edge	6.0	ft	2.0	ft
Total lateral clearance	8.0	ft	4.0	ft
Access points per mile	0		0	
Median type	Undivided			
Free-flow speed:	Base		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.9	mph	1.8	mph
Median type adjustment, FM	1.6	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	57.5	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	3474	vph	0	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	965		0	
Trucks and buses	6	%	6	%
Recreational vehicles	0	%	0	%
Terrain type	Grade		Grade	
Grade	3.50	%	3.00	%
Segment length	0.60	mi	0.70	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.0		1.5	
Recreational vehicles PCE, ER	3.0		3.0	
Heavy vehicle adjustment, fHV	0.943		0.971	
Flow rate, vp	2045	pcphpl	0	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	2045	pcphpl	0	pcphpl
Free-flow speed, FFS	57.5	mph	60.0	mph
Avg. passenger-car travel speed, S	54.3	mph	60.0	mph
Level of service, LOS	E		A	
Density, D	37.7	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS2000: Multilane Highways Release 4.1a

OPERATIONAL ANALYSIS

Analyst: BA
Agency/Co: Parsons
Date: 8/18/02
Analsis Period: 1 PM
Highway: BAY BRIDGE WESTBOUND SPAN
From/To:
Jurisdiction:
Analysis Year: 2025 SUMMER WEEKEND
Project ID: REVERSIBLE LANE OPERATION - 2 WB Lanes

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	2.0	ft	2.0	ft
Left edge	6.0	ft	2.0	ft
Total lateral clearance	8.0	ft	4.0	ft
Access points per mile	0		0	
Median type	Undivided			
Free-flow speed:	Base		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.9	mph	1.8	mph
Median type adjustment, FM	1.6	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	57.5	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	3785	vph	0	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	1051		0	
Trucks and buses	6	%	6	%
Recreational vehicles	0	%	0	%
Terrain type	Grade		Grade	
Grade	3.50	%	3.00	%
Segment length	0.60	mi	0.70	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.0		1.5	
Recreational vehicles PCE, ER	3.0		3.0	
Heavy vehicle adjustment, fHV	0.943		0.971	
Flow rate, vp	2228	pcphpl	0	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	2228	pcphpl	0	pcphpl
Free-flow speed, FFS	57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		mph	60.0	mph
Level of service, LOS	F		A	
Density, D		pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS2000: Multilane Highways Release 4.1a

OPERATIONAL ANALYSIS

Analyst: BA
Agency/Co: Parsons
Date: 8/18/02
Analsis Period: 2 PM
Highway: BAY BRIDGE WESTBOUND SPAN
From/To:
Jurisdiction:
Analysis Year: 2025 SUMMER WEEKEND
Project ID: REVERSIBLE LANE OPERATION - 2 WB Lanes

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	2.0	ft	2.0	ft
Left edge	6.0	ft	2.0	ft
Total lateral clearance	8.0	ft	4.0	ft
Access points per mile	0		0	
Median type	Undivided			
Free-flow speed:	Base		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.9	mph	1.8	mph
Median type adjustment, FM	1.6	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	57.5	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	3749	vph	0	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	1041		0	
Trucks and buses	6	%	6	%
Recreational vehicles	0	%	0	%
Terrain type	Grade		Grade	
Grade	3.50	%	3.00	%
Segment length	0.60	mi	0.70	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.0		1.5	
Recreational vehicles PCE, ER	3.0		3.0	
Heavy vehicle adjustment, fHV	0.943		0.971	
Flow rate, vp	2207	pcphpl	0	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	2207	pcphpl	0	pcphpl
Free-flow speed, FFS	57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		mph	60.0	mph
Level of service, LOS	F		A	
Density, D		pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS2000: Multilane Highways Release 4.1a

OPERATIONAL ANALYSIS

Analyst: BA
Agency/Co: Parsons
Date: 8/18/02
Analsis Period: 3 PM
Highway: BAY BRIDGE WESTBOUND SPAN
From/To:
Jurisdiction:
Analysis Year: 2025 SUMMER WEEKEND
Project ID: REVERSIBLE LANE OPERATION - 2 WB Lanes

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	2.0	ft	2.0	ft
Left edge	6.0	ft	2.0	ft
Total lateral clearance	8.0	ft	4.0	ft
Access points per mile	0		0	
Median type	Undivided			
Free-flow speed:	Base		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.9	mph	1.8	mph
Median type adjustment, FM	1.6	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	57.5	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	4341	vph	0	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	1206		0	
Trucks and buses	6	%	0	%
Recreational vehicles	0	%	0	%
Terrain type	Grade		Level	
Grade	3.50	%	3.00	%
Segment length	0.60	mi	0.70	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.0		1.5	
Recreational vehicles PCE, ER	3.0		1.2	
Heavy vehicle adjustment, fHV	0.943		1.000	
Flow rate, vp	2556	pcphpl	0	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	2556	pcphpl	0	pcphpl
Free-flow speed, FFS	57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		mph	60.0	mph
Level of service, LOS	F		A	
Density, D		pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS2000: Multilane Highways Release 4.1a

OPERATIONAL ANALYSIS

Analyst: BA
Agency/Co: Parsons
Date: 8/18/02
Analsis Period: 4 PM
Highway: BAY BRIDGE WESTBOUND SPAN
From/To:
Jurisdiction:
Analysis Year: 2025 SUMMER WEEKEND
Project ID: REVERSIBLE LANE OPERATION - 2 WB Lanes

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	2.0	ft	2.0	ft
Left edge	6.0	ft	2.0	ft
Total lateral clearance	8.0	ft	4.0	ft
Access points per mile	0		0	
Median type	Undivided			
Free-flow speed:	Base		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.9	mph	1.8	mph
Median type adjustment, FM	1.6	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	57.5	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	4107	vph	0	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	1141		0	
Trucks and buses	6	%	0	%
Recreational vehicles	0	%	0	%
Terrain type	Grade		Level	
Grade	3.50	%	3.00	%
Segment length	0.60	mi	0.70	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.0		1.5	
Recreational vehicles PCE, ER	3.0		1.2	
Heavy vehicle adjustment, fHV	0.943		1.000	
Flow rate, vp	2418	pcphpl	0	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	2418	pcphpl	0	pcphpl
Free-flow speed, FFS	57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		mph	60.0	mph
Level of service, LOS	F		A	
Density, D		pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS2000: Multilane Highways Release 4.1a

OPERATIONAL ANALYSIS

Analyst: BA
Agency/Co: Parsons
Date: 8/18/02
Analsis Period: 5 PM
Highway: BAY BRIDGE WESTBOUND SPAN
From/To:
Jurisdiction:
Analysis Year: 2025 SUMMER WEEKEND
Project ID: REVERSIBLE LANE OPERATION - 2 WB Lanes

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	2.0	ft	2.0	ft
Left edge	6.0	ft	2.0	ft
Total lateral clearance	8.0	ft	4.0	ft
Access points per mile	0		0	
Median type	Undivided			
Free-flow speed:	Base		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.9	mph	1.8	mph
Median type adjustment, FM	1.6	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	57.5	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	3658	vph	0	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	1016		0	
Trucks and buses	6	%	0	%
Recreational vehicles	0	%	0	%
Terrain type	Grade		Level	
Grade	3.50	%	3.00	%
Segment length	0.60	mi	0.70	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.0		1.5	
Recreational vehicles PCE, ER	3.0		1.2	
Heavy vehicle adjustment, fHV	0.943		1.000	
Flow rate, vp	2154	pcphpl	0	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	2154	pcphpl	0	pcphpl
Free-flow speed, FFS	57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		mph	60.0	mph
Level of service, LOS	F		A	
Density, D		pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS2000: Multilane Highways Release 4.1a

OPERATIONAL ANALYSIS

Analyst: BA
Agency/Co: Parsons
Date: 8/18/02
Analsis Period: 6 PM
Highway: BAY BRIDGE WESTBOUND SPAN
From/To:
Jurisdiction:
Analysis Year: 2025 SUMMER WEEKEND
Project ID: REVERSIBLE LANE OPERATION - 2 WB Lanes

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	2.0	ft	2.0	ft
Left edge	6.0	ft	2.0	ft
Total lateral clearance	8.0	ft	4.0	ft
Access points per mile	0		0	
Median type	Undivided			
Free-flow speed:	Base		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.9	mph	1.8	mph
Median type adjustment, FM	1.6	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	57.5	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	3475	vph	0	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	965		0	
Trucks and buses	6	%	0	%
Recreational vehicles	0	%	0	%
Terrain type	Grade		Level	
Grade	3.50	%	3.00	%
Segment length	0.60	mi	0.70	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.0		1.5	
Recreational vehicles PCE, ER	3.0		1.2	
Heavy vehicle adjustment, fHV	0.943		1.000	
Flow rate, vp	2046	pcphpl	0	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	2046	pcphpl	0	pcphpl
Free-flow speed, FFS	57.5	mph	60.0	mph
Avg. passenger-car travel speed, S	54.3	mph	60.0	mph
Level of service, LOS	E		A	
Density, D	37.7	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS2000: Multilane Highways Release 4.1b

OPERATIONAL ANALYSIS

Analyst: BA
Agency/Co:
Date: 8/18/02
Analsis Period: 7 AM
Highway: BAY BRIDGE WESTBOUND SPAN
From/To:
Jurisdiction:
Analysis Year: 2001 SUMMER WEEKEND
Project ID: REVERSIBLE LANE OPERATION

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	4.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	10.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided			
Free-flow speed:	Base		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.4	mph	0.0	mph
Median type adjustment, FM	1.6	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	58.0	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	1019	vph	0	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	283		0	
Trucks and buses	6	%	0	%
Recreational vehicles	0	%	0	%
Terrain type	Grade		Level	
Grade	3.00	%	0.00	%
Segment length	0.70	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	3.0		1.2	
Heavy vehicle adjustment, fHV	0.971		1.000	
Flow rate, vp	583	pcphpl	0	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	583	pcphpl	0	pcphpl
Free-flow speed, FFS	58.0	mph	60.0	mph
Avg. passenger-car travel speed, S	58.0	mph	60.0	mph
Level of service, LOS	A		A	
Density, D	10.1	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS2000: Multilane Highways Release 4.1a

OPERATIONAL ANALYSIS

Analyst: BA
Agency/Co: Parsons
Date: 8/18/02
Analsis Period: 8 PM
Highway: BAY BRIDGE WESTBOUND SPAN
From/To:
Jurisdiction:
Analysis Year: 2025 SUMMER WEEKEND
Project ID: REVERSIBLE LANE OPERATION - 2 WB Lanes

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	2.0	ft	2.0	ft
Left edge	6.0	ft	2.0	ft
Total lateral clearance	8.0	ft	4.0	ft
Access points per mile	0		0	
Median type	Undivided			
Free-flow speed:	Base		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.9	mph	1.8	mph
Median type adjustment, FM	1.6	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	57.5	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	2520	vph	0	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	700		0	
Trucks and buses	6	%	0	%
Recreational vehicles	0	%	0	%
Terrain type	Grade		Level	
Grade	3.50	%	3.00	%
Segment length	0.60	mi	0.70	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.0		1.5	
Recreational vehicles PCE, ER	3.0		1.2	
Heavy vehicle adjustment, fHV	0.943		1.000	
Flow rate, vp	1484	pcphpl	0	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1484	pcphpl	0	pcphpl
Free-flow speed, FFS	57.5	mph	60.0	mph
Avg. passenger-car travel speed, S	57.3	mph	60.0	mph
Level of service, LOS	C		A	
Density, D	25.9	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS2000: Multilane Highways Release 4.1a

OPERATIONAL ANALYSIS

Analyst: BA
Agency/Co: Parsons
Date: 8/18/02
Analsis Period: 9 PM
Highway: BAY BRIDGE WESTBOUND SPAN
From/To:
Jurisdiction:
Analysis Year: 2025 SUMMER WEEKEND
Project ID: REVERSIBLE LANE OPERATION - 2 WB Lanes

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	2.0	ft	2.0	ft
Left edge	6.0	ft	2.0	ft
Total lateral clearance	8.0	ft	4.0	ft
Access points per mile	0		0	
Median type	Undivided			
Free-flow speed:	Base		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.9	mph	1.8	mph
Median type adjustment, FM	1.6	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	57.5	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	2104	vph	0	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	584		0	
Trucks and buses	6	%	0	%
Recreational vehicles	0	%	0	%
Terrain type	Grade		Level	
Grade	3.50	%	3.00	%
Segment length	0.60	mi	0.70	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.0		1.5	
Recreational vehicles PCE, ER	3.0		1.2	
Heavy vehicle adjustment, fHV	0.943		1.000	
Flow rate, vp	1239	pcphpl	0	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1239	pcphpl	0	pcphpl
Free-flow speed, FFS	57.5	mph	60.0	mph
Avg. passenger-car travel speed, S	57.5	mph	60.0	mph
Level of service, LOS	C		A	
Density, D	21.5	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

Bay Bridge
2025 Summer Weekend Day
Reversible Lane Operation
Eastbound Analysis
(2 Lanes, 80 Percent Traffic)

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	10 AM
Freeway/Direction:	BAY BRIDGE EASTBOUND
From/To:	
Jurisdiction:	Anne Arundel County
Analysis Year:	2025
Description:	REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

Flow Inputs and Adjustments

Volume, V	3223	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	895	v
Trucks and buses	10	%
Recreational vehicles	4	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	4.00	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	1.5	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2005	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2005	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	56.5	mi/h
Number of lanes, N	2	
Density, D	35.5	pc/mi/ln
Level of service, LOS	E	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	11 AM
Freeway/Direction:	BAY BRIDGE EASTBOUND
From/To:	
Jurisdiction:	Anne Arundel County
Analysis Year:	2025
Description:	REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

Flow Inputs and Adjustments

Volume, V	3617	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1005	v
Trucks and buses	10	%
Recreational vehicles	4	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	4.00	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	1.5	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2251	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2251	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	51.6	mi/h
Number of lanes, N	2	
Density, D	43.6	pc/mi/ln
Level of service, LOS	E	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	12 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND
From/To:	
Jurisdiction:	Anne Arundel County
Analysis Year:	2025
Description:	REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

Flow Inputs and Adjustments

Volume, V	3827	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1063	v
Trucks and buses	10	%
Recreational vehicles	4	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	4.00	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	1.5	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2381	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2381	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	1 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND
From/To:	
Jurisdiction:	Anne Arundel County
Analysis Year:	2025
Description:	REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

Flow Inputs and Adjustments

Volume, V	3951	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1098	v
Trucks and buses	10	%
Recreational vehicles	4	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	4.00	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	1.5	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2458	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2458	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	2 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND
From/To:	
Jurisdiction:	Anne Arundel County
Analysis Year:	2025
Description:	REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

Flow Inputs and Adjustments

Volume, V	4370	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1214	v
Trucks and buses	10	%
Recreational vehicles	4	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	4.00	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	1.5	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2719	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2719	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	3 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND
From/To:	
Jurisdiction:	Anne Arundel County
Analysis Year:	2025
Description:	REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

Flow Inputs and Adjustments

Volume, V	4610	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1281	v
Trucks and buses	10	%
Recreational vehicles	4	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	4.00	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	1.5	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2868	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2868	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	4 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND
From/To:	
Jurisdiction:	Anne Arundel County
Analysis Year:	2025
Description:	REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

Flow Inputs and Adjustments

Volume, V	4562	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1267	v
Trucks and buses	10	%
Recreational vehicles	4	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	4.00	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	1.5	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2839	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2839	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	5 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND
From/To:	
Jurisdiction:	Anne Arundel County
Analysis Year:	2025
Description:	REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

Flow Inputs and Adjustments

Volume, V	4607	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1280	v
Trucks and buses	10	%
Recreational vehicles	4	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	4.00	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	1.5	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2867	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2867	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	6 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND
From/To:	
Jurisdiction:	Anne Arundel County
Analysis Year:	2025
Description:	REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

Flow Inputs and Adjustments

Volume, V	3614	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1004	v
Trucks and buses	10	%
Recreational vehicles	4	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	4.00	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	1.5	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2249	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2249	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	51.6	mi/h
Number of lanes, N	2	
Density, D	43.6	pc/mi/ln
Level of service, LOS	E	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	7 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND
From/To:	
Jurisdiction:	Anne Arundel County
Analysis Year:	2025
Description:	REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

Flow Inputs and Adjustments

Volume, V	3317	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	921	v
Trucks and buses	10	%
Recreational vehicles	4	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	4.00	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	1.5	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2064	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2064	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	55.7	mi/h
Number of lanes, N	2	
Density, D	37.1	pc/mi/ln
Level of service, LOS	E	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	8 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND
From/To:	
Jurisdiction:	Anne Arundel County
Analysis Year:	2025
Description:	REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

Flow Inputs and Adjustments

Volume, V	3186	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	885	v
Trucks and buses	10	%
Recreational vehicles	4	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	4.00	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	1.5	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1982	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1982	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	56.7	mi/h
Number of lanes, N	2	
Density, D	34.9	pc/mi/ln
Level of service, LOS	D	

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

HCS2000: Basic Freeway Segments Release 4.1a

Operational Analysis

Analyst:	Bala Akundi
Agency or Company:	Parsons
Date Performed:	8/13/02
Analysis Time Period:	9 PM
Freeway/Direction:	BAY BRIDGE EASTBOUND
From/To:	
Jurisdiction:	Anne Arundel County
Analysis Year:	2025
Description:	REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

Flow Inputs and Adjustments

Volume, V	3238	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	899	v
Trucks and buses	10	%
Recreational vehicles	4	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	4.00	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	1.5	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2015	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2015	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	56.4	mi/h
Number of lanes, N	2	
Density, D	35.8	pc/mi/ln
Level of service, LOS	E	

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