HCS7 Multilane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Ex. Design Hour
Project Description	High River Energy Center Site No. A	Unit	United States Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Access Point Density, pts/mi	0.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	70.0		

Direction 1 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 1 Demand and Capacity

Volume(V) veh/h	1499	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	870
Total Trucks, %	9.05	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2226
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.39

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.2
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	12.8
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	797	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	5.52
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

HCS7 Multilane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Ex. Design Hour
Project Description	High River Energy Center Site No. A	Unit	United States Customary

Direction 2 Geometric Data

Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Access Point Density, pts/mi	0.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	70.0		

Direction 2 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 2 Demand and Capacity

Volume(V) veh/h	1000	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	580
Total Trucks, %	9.05	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2226
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.26

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.2
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	8.5
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	532	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	5.32
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

HCS7 Multilane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Ex. Design Hour
Project Description	High River Energy Center Site No. B	Unit	United States Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Access Point Density, pts/mi	0.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	70.0		

Direction 1 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 1 Demand and Capacity

Volume(V) veh/h	1773	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1028
Total Trucks, %	9.05	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2226
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.46

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.2
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	15.1
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	943	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	5.61
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

HCS7 Multilane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Ex. Design Hour
Project Description	High River Energy Center Site No. B	Unit	United States Customary

Direction 2 Geometric Data

Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Access Point Density, pts/mi	0.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	70.0		

Direction 2 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 2 Demand and Capacity

Volume(V) veh/h	1182	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	686
Total Trucks, %	9.05	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2226
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.31

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.2
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	10.1
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	629	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	5.40
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

HCS7 Multilane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Ex. Design Hour
Project Description	High River Energy Center Site No. C	Unit	United States Customary

Direction 1 Geometric Data

Direction 1	Northbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	3.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	2
Median Type	Divided	Total Lateral Clearance (TLC), ft	8
Free-Flow Speed (FFS), mi/h	53.4		

Direction 1 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 1 Demand and Capacity

Volume(V) veh/h	1100	Heavy Vehicle Adjustment Factor (f_{HV})	0.944
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	620
Total Trucks, %	5.91	Capacity (c), pc/h/ln	2040
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1975
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.31

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.0
Total Lateral Clearance Adj. (f_{LLC})	0.9	Density (D), pc/mi/ln	11.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.8		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	585	Effective Speed Factor (S_t)	4.79
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.04
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

HCS7 Multilane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Ex. Design Hour
Project Description	High River Energy Center Site No. C	Unit	United States Customary

Direction 2 Geometric Data

Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	3.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	2
Median Type	Divided	Total Lateral Clearance (TLC), ft	8
Free-Flow Speed (FFS), mi/h	53.4		

Direction 2 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 2 Demand and Capacity

Volume(V) veh/h	733	Heavy Vehicle Adjustment Factor (f_{HV})	0.944
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	413
Total Trucks, %	5.91	Capacity (c), pc/h/ln	2040
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1975
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.21

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.0
Total Lateral Clearance Adj. (f_{LLC})	0.9	Density (D), pc/mi/ln	7.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.8		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	390	Effective Speed Factor (S_t)	4.79
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.84
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

HCS7 Two-Lane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Ex. Design Hour
Project Description	High River Energy Center Location D	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	7920
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	261	Opposing Demand Flow Rate, veh/h	173
Peak Hour Factor	0.94	Total Trucks, %	8.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient	3.70080	Speed Power Coefficient	0.54710
PF Slope Coefficient	-1.18691	PF Power Coefficient	0.81097
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	7920	-	-	61.0

Vehicle Results

Average Speed, mi/h	61.0	Percent Followers, %	32.9
Segment Travel Time, minutes	1.47	Followers Density, followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	261	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.99	Bicycle Effective Speed Factor	4.79
Bicycle LOS	E		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Ex. Design Hour
Project Description	High River Energy Center Location E	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3400
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	227	Opposing Demand Flow Rate, veh/h	151
Peak Hour Factor	0.94	Total Trucks, %	14.25
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.2
Speed Slope Coefficient	3.63840	Speed Power Coefficient	0.55437
PF Slope Coefficient	-1.20770	PF Power Coefficient	0.81896
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3400	-	-	61.1

Vehicle Results

Average Speed, mi/h	61.1	Percent Followers, %	30.1
Segment Travel Time, minutes	0.63	Followers Density, followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	227	Bicycle Effective Width, ft	24
Bicycle LOS Score	7.30	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Ex. Design Hour
Project Description	High River Energy Center Location F	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	15840
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	40	Opposing Demand Flow Rate, veh/h	27
Peak Hour Factor	0.94	Total Trucks, %	5.29
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.02

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.3
Speed Slope Coefficient	3.63002	Speed Power Coefficient	0.62039
PF Slope Coefficient	-1.13794	PF Power Coefficient	0.81082
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	15840	-	-	62.3

Vehicle Results

Average Speed, mi/h	62.3	Percent Followers, %	8.1
Segment Travel Time, minutes	2.89	Followers Density, followers/mi/ln	0.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	40	Bicycle Effective Width, ft	39
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	4.79
Bicycle LOS	A		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Ex. Design Hour
Project Description	High River Energy Center Location G	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	7920
Lane Width, ft	12	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	13	Opposing Demand Flow Rate, veh/h	9
Peak Hour Factor	0.94	Total Trucks, %	5.33
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.8
Speed Slope Coefficient	3.39754	Speed Power Coefficient	0.64365
PF Slope Coefficient	-1.12071	PF Power Coefficient	0.82620
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	7920	-	-	58.8

Vehicle Results

Average Speed, mi/h	58.8	Percent Followers, %	3.0
Segment Travel Time, minutes	1.53	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	13	Bicycle Effective Width, ft	25
Bicycle LOS Score	2.03	Bicycle Effective Speed Factor	4.79
Bicycle LOS	B		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Ex. Design Hour
Project Description	High River Energy Center Location H	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	7920
Lane Width, ft	12	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	16	Opposing Demand Flow Rate, veh/h	11
Peak Hour Factor	0.94	Total Trucks, %	8.80
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.7
Speed Slope Coefficient	3.39484	Speed Power Coefficient	0.64000
PF Slope Coefficient	-1.12391	PF Power Coefficient	0.82540
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	7920	-	-	58.7

Vehicle Results

Average Speed, mi/h	58.7	Percent Followers, %	3.6
Segment Travel Time, minutes	1.53	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	16	Bicycle Effective Width, ft	25
Bicycle LOS Score	3.33	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Ex. Design Hour
Project Description	High River Energy Center Location I	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	11088
Lane Width, ft	12	Shoulder Width, ft	5
Speed Limit, mi/h	40	Access Point Density, pts/mi	2.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	267	Opposing Demand Flow Rate, veh/h	178
Peak Hour Factor	0.94	Total Trucks, %	13.36
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	44.0
Speed Slope Coefficient	2.72186	Speed Power Coefficient	0.54579
PF Slope Coefficient	-1.24604	PF Power Coefficient	0.73457
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	11088	-	-	42.9

Vehicle Results

Average Speed, mi/h	42.9	Percent Followers, %	37.6
Segment Travel Time, minutes	2.93	Followers Density, followers/mi/ln	2.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	267	Bicycle Effective Width, ft	22
Bicycle LOS Score	6.71	Bicycle Effective Speed Factor	4.17
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Ex. Design Hour
Project Description	High River Energy Center Location J	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	11088
Lane Width, ft	12	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	16	Opposing Demand Flow Rate, veh/h	11
Peak Hour Factor	0.94	Total Trucks, %	8.80
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.7
Speed Slope Coefficient	3.41434	Speed Power Coefficient	0.64000
PF Slope Coefficient	-1.13571	PF Power Coefficient	0.80583
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	11088	-	-	58.7

Vehicle Results

Average Speed, mi/h	58.7	Percent Followers, %	4.0
Segment Travel Time, minutes	2.15	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	16	Bicycle Effective Width, ft	25
Bicycle LOS Score	3.33	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

HCS7 Multilane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Prop. Design Hour
Project Description	High River Energy Center Site No. A	Unit	United States Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Access Point Density, pts/mi	0.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	70.0		

Direction 1 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 1 Demand and Capacity

Volume(V) veh/h	1546	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	904
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2226
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.41

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.2
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	13.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	822	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	5.93
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

HCS7 Multilane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Prop. Design Hour
Project Description	High River Energy Center Site No. A	Unit	United States Customary

Direction 2 Geometric Data

Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Access Point Density, pts/mi	0.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	70.0		

Direction 2 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 2 Demand and Capacity

Volume(V) veh/h	1031	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	604
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2226
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.27

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.2
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	8.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	548	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	5.73
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

HCS7 Multilane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Prop. Design Hour
Project Description	High River Energy Center Site No. B	Unit	United States Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Access Point Density, pts/mi	0.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	70.0		

Direction 1 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 1 Demand and Capacity

Volume(V) veh/h	1866	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1092
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2226
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.49

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.2
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	16.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	993	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	6.03
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

HCS7 Multilane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Prop. Design Hour
Project Description	High River Energy Center Site No. B	Unit	United States Customary

Direction 2 Geometric Data

Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Access Point Density, pts/mi	0.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	70.0		

Direction 2 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 2 Demand and Capacity

Volume(V) veh/h	1244	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	728
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2226
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.2
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	10.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	662	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	5.82
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

HCS7 Multilane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Prop. Design Hour
Project Description	High River Energy Center Site No. C	Unit	United States Customary

Direction 1 Geometric Data

Direction 1	Northbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	3.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	2
Median Type	Divided	Total Lateral Clearance (TLC), ft	8
Free-Flow Speed (FFS), mi/h	53.4		

Direction 1 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 1 Demand and Capacity

Volume(V) veh/h	1116	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	635
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2040
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1975
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.0
Total Lateral Clearance Adj. (f_{LLC})	0.9	Density (D), pc/mi/ln	12.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.8		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	594	Effective Speed Factor (S_t)	4.79
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.41
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

HCS7 Multilane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Prop. Design Hour
Project Description	High River Energy Center Site No. C	Unit	United States Customary

Direction 2 Geometric Data

Direction 2	Southbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	3.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	2
Median Type	Divided	Total Lateral Clearance (TLC), ft	8
Free-Flow Speed (FFS), mi/h	53.4		

Direction 2 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 2 Demand and Capacity

Volume(V) veh/h	743	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	422
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2040
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1975
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.21

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.0
Total Lateral Clearance Adj. (f_{LLC})	0.9	Density (D), pc/mi/ln	8.1
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.8		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	395	Effective Speed Factor (S_t)	4.79
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.21
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

HCS7 Two-Lane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Prop. Design Hour
Project Description	High River Energy Center Location D	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	7920
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	269	Opposing Demand Flow Rate, veh/h	179
Peak Hour Factor	0.94	Total Trucks, %	10.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient	3.70070	Speed Power Coefficient	0.54546
PF Slope Coefficient	-1.18835	PF Power Coefficient	0.81058
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	7920	-	-	61.0

Vehicle Results

Average Speed, mi/h	61.0	Percent Followers, %	33.6
Segment Travel Time, minutes	1.48	Followers Density, followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	269	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.48	Bicycle Effective Speed Factor	4.79
Bicycle LOS	E		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Prop. Design Hour
Project Description	High River Energy Center Location E	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3400
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	384	Opposing Demand Flow Rate, veh/h	255
Peak Hour Factor	0.94	Total Trucks, %	24.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.23

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.9
Speed Slope Coefficient	3.65903	Speed Power Coefficient	0.52506
PF Slope Coefficient	-1.23339	PF Power Coefficient	0.81146
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.8
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3400	-	-	60.0

Vehicle Results

Average Speed, mi/h	60.0	Percent Followers, %	43.3
Segment Travel Time, minutes	0.64	Followers Density, followers/mi/ln	2.8
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	384	Bicycle Effective Width, ft	24
Bicycle LOS Score	13.35	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Prop. Design Hour
Project Description	High River Energy Center Location F	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	15840
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	99	Opposing Demand Flow Rate, veh/h	65
Peak Hour Factor	0.94	Total Trucks, %	25.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.6
Speed Slope Coefficient	3.62450	Speed Power Coefficient	0.59209
PF Slope Coefficient	-1.16312	PF Power Coefficient	0.80433
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	15840	-	-	61.6

Vehicle Results

Average Speed, mi/h	61.6	Percent Followers, %	16.6
Segment Travel Time, minutes	2.92	Followers Density, followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	99	Bicycle Effective Width, ft	34
Bicycle LOS Score	10.47	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Prop. Design Hour
Project Description	High River Energy Center Location G	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	7920
Lane Width, ft	12	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	112	Opposing Demand Flow Rate, veh/h	74
Peak Hour Factor	0.94	Total Trucks, %	32.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	57.9
Speed Slope Coefficient	3.40861	Speed Power Coefficient	0.58672
PF Slope Coefficient	-1.17058	PF Power Coefficient	0.81233
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	7920	-	-	57.6

Vehicle Results

Average Speed, mi/h	57.6	Percent Followers, %	17.9
Segment Travel Time, minutes	1.56	Followers Density, followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	112	Bicycle Effective Width, ft	19
Bicycle LOS Score	20.02	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Prop. Design Hour
Project Description	High River Energy Center Location H	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	11088
Lane Width, ft	12	Shoulder Width, ft	5
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	115	Opposing Demand Flow Rate, veh/h	77
Peak Hour Factor	0.94	Total Trucks, %	35.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.3
Speed Slope Coefficient	3.56217	Speed Power Coefficient	0.58559
PF Slope Coefficient	-1.17345	PF Power Coefficient	0.80041
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	11088	-	-	60.0

Vehicle Results

Average Speed, mi/h	60.0	Percent Followers, %	18.8
Segment Travel Time, minutes	2.10	Followers Density, followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	115	Bicycle Effective Width, ft	30
Bicycle LOS Score	20.00	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Prop. Design Hour
Project Description	High River Energy Center Location I	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	11088
Lane Width, ft	12	Shoulder Width, ft	5
Speed Limit, mi/h	40	Access Point Density, pts/mi	2.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	276	Opposing Demand Flow Rate, veh/h	183
Peak Hour Factor	0.94	Total Trucks, %	14.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	43.9
Speed Slope Coefficient	2.72275	Speed Power Coefficient	0.54418
PF Slope Coefficient	-1.24757	PF Power Coefficient	0.73416
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	11088	-	-	42.9

Vehicle Results

Average Speed, mi/h	42.9	Percent Followers, %	38.4
Segment Travel Time, minutes	2.94	Followers Density, followers/mi/ln	2.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	276	Bicycle Effective Width, ft	22
Bicycle LOS Score	6.99	Bicycle Effective Speed Factor	4.17
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Macen Whirrett	Date	6/5/2019
Agency	TRC Engineers, Inc.	Analysis Year	2019
Jurisdiction		Time Period Analyzed	Prop. Design Hour
Project Description	High River Energy Center Location J	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	11088
Lane Width, ft	12	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	24	Opposing Demand Flow Rate, veh/h	16
Peak Hour Factor	0.94	Total Trucks, %	19.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.3
Speed Slope Coefficient	3.40353	Speed Power Coefficient	0.63231
PF Slope Coefficient	-1.14255	PF Power Coefficient	0.80435
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	11088	-	-	58.3

Vehicle Results

Average Speed, mi/h	58.3	Percent Followers, %	5.6
Segment Travel Time, minutes	2.16	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	24	Bicycle Effective Width, ft	25
Bicycle LOS Score	8.49	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		