

APPENDIX 25-7

HIGHWAY CAPACITY SOFTWARE (HCS) LEVEL OF SERVICE OUTPUT

HCS7 Two-Lane Highway Report

Project Information

Analyst	BH	Date	11/02/2020
Agency	PDE	Analysis Year	2020
Jurisdiction	NYS DOT	Time Period Analyzed	Existing
Project Description	Massena Helena Road	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	21	Opposing Demand Flow Rate, veh/h	19
Peak Hour Factor	0.90	Total Trucks, %	9.07
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	56.2
Speed Slope Coefficient	3.25239	Speed Power Coefficient	0.62867
PF Slope Coefficient	-1.14615	PF Power Coefficient	0.82419
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	5280	-	-	56.2

Vehicle Results

Average Speed, mi/h	56.2	Percent Followers, %	4.7
Segment Travel Time, minutes	1.07	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

HCS7 Two-Lane Highway Report

Project Information

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Agency	PDE	Analysis Year	2020
Jurisdiction	NYS DOT	Time Period Analyzed	Existing
Project Description	Massena Raquette Road	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	0
Speed Limit, mi/h	50	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	24	Opposing Demand Flow Rate, veh/h	28
Peak Hour Factor	0.90	Total Trucks, %	5.65
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.7
Speed Slope Coefficient	2.95921	Speed Power Coefficient	0.61925
PF Slope Coefficient	-1.16733	PF Power Coefficient	0.80349
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	5280	-	-	50.7

Vehicle Results

Average Speed, mi/h	50.7	Percent Followers, %	5.7
Segment Travel Time, minutes	1.18	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

HCS7 Two-Lane Highway Report

Project Information

Analyst	BH	Date	11/02/2020
Agency	PDE	Analysis Year	2020
Jurisdiction	NYS DOT	Time Period Analyzed	Existing
Project Description	NY 420	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	11	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	154	Opposing Demand Flow Rate, veh/h	211
Peak Hour Factor	0.90	Total Trucks, %	6.29
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	38.3
Speed Slope Coefficient	2.38737	Speed Power Coefficient	0.53618
PF Slope Coefficient	-1.23596	PF Power Coefficient	0.73751
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	5280	-	-	37.8

Vehicle Results

Average Speed, mi/h	37.8	Percent Followers, %	26.8
Segment Travel Time, minutes	1.59	Followers Density, followers/mi/ln	1.1
Vehicle LOS	A		

HCS7 Two-Lane Highway Report

Project Information

Analyst	BH	Date	11/02/2020
Agency	PDE	Analysis Year	2020
Jurisdiction	NYS DOT	Time Period Analyzed	Existing
Project Description	Small Road	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	0
Speed Limit, mi/h	40	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	18	Opposing Demand Flow Rate, veh/h	16
Peak Hour Factor	0.90	Total Trucks, %	5.29
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.3
Speed Slope Coefficient	2.32823	Speed Power Coefficient	0.63284
PF Slope Coefficient	-1.14571	PF Power Coefficient	0.76706
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	5280	-	-	39.3

Vehicle Results

Average Speed, mi/h	39.3	Percent Followers, %	5.1
Segment Travel Time, minutes	1.53	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

HCS7 Two-Lane Highway Report

Project Information

Analyst	BH	Date	11/02/2020
Agency	PDE	Analysis Year	2020
Jurisdiction	NYS DOT	Time Period Analyzed	Existing
Project Description	South Raquette Road East	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	0
Speed Limit, mi/h	30	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	86	Opposing Demand Flow Rate, veh/h	97
Peak Hour Factor	0.90	Total Trucks, %	10.46
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	27.7
Speed Slope Coefficient	1.76205	Speed Power Coefficient	0.57574
PF Slope Coefficient	-1.12575	PF Power Coefficient	0.70522
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	27.7

Vehicle Results

Average Speed, mi/h	27.7	Percent Followers, %	18.0
Segment Travel Time, minutes	2.17	Followers Density, followers/mi/ln	0.6
Vehicle LOS	A		

HCS7 Two-Lane Highway Report

Project Information

Analyst	BH	Date	11/02/2020
Agency	PDE	Analysis Year	2020
Jurisdiction	NYS DOT	Time Period Analyzed	Existing
Project Description	South Raquette Road West	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	0
Speed Limit, mi/h	30	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	133	Opposing Demand Flow Rate, veh/h	127
Peak Hour Factor	0.90	Total Trucks, %	4.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	27.9
Speed Slope Coefficient	1.78773	Speed Power Coefficient	0.56320
PF Slope Coefficient	-1.14049	PF Power Coefficient	0.70121
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	27.6

Vehicle Results

Average Speed, mi/h	27.6	Percent Followers, %	24.2
Segment Travel Time, minutes	2.17	Followers Density, followers/mi/ln	1.2
Vehicle LOS	A		

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Project Information

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Agency	PDE	Analysis Year	2020
Jurisdiction	NYS DOT	Time Period Analyzed	Construction
Project Description	Massena Helena Road	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	39	Opposing Demand Flow Rate, veh/h	36
Peak Hour Factor	0.90	Total Trucks, %	9.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.02

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	56.2
Speed Slope Coefficient	3.26758	Speed Power Coefficient	0.61232
PF Slope Coefficient	-1.16060	PF Power Coefficient	0.81995
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	5280	-	-	56.2

Vehicle Results

Average Speed, mi/h	56.2	Percent Followers, %	7.8
Segment Travel Time, minutes	1.07	Followers Density, followers/mi/ln	0.1
Vehicle LOS	A		

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Project Information

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Agency	PDE	Analysis Year	2020
Jurisdiction	NYS DOT	Time Period Analyzed	Construction
Project Description	Massena Raquette Road	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	0
Speed Limit, mi/h	50	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	77	Opposing Demand Flow Rate, veh/h	80
Peak Hour Factor	0.90	Total Trucks, %	9.18
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.5
Speed Slope Coefficient	2.99092	Speed Power Coefficient	0.58381
PF Slope Coefficient	-1.19966	PF Power Coefficient	0.79455
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	50.5

Vehicle Results

Average Speed, mi/h	50.5	Percent Followers, %	14.4
Segment Travel Time, minutes	1.19	Followers Density, followers/mi/ln	0.2
Vehicle LOS	A		

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Jurisdiction	NYS DOT	Time Period Analyzed	Construction
Project Description	NY 420	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	11	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	277	Opposing Demand Flow Rate, veh/h	334
Peak Hour Factor	0.90	Total Trucks, %	8.15
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	38.3
Speed Slope Coefficient	2.42297	Speed Power Coefficient	0.50837
PF Slope Coefficient	-1.26587	PF Power Coefficient	0.72948
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.3

Vehicle Results

Average Speed, mi/h	37.3	Percent Followers, %	39.1
Segment Travel Time, minutes	1.61	Followers Density, followers/mi/ln	2.9
Vehicle LOS	B		

HCS7 Two-Lane Highway Report

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Jurisdiction	NYS DOT	Time Period Analyzed	Construction
Project Description	Small Road	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	0
Speed Limit, mi/h	40	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	71	Opposing Demand Flow Rate, veh/h	69
Peak Hour Factor	0.90	Total Trucks, %	9.53
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.04

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.1
Speed Slope Coefficient	2.36573	Speed Power Coefficient	0.58979
PF Slope Coefficient	-1.18462	PF Power Coefficient	0.75574
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	5280	-	-	39.1

Vehicle Results

Average Speed, mi/h	39.1	Percent Followers, %	14.8
Segment Travel Time, minutes	1.53	Followers Density, followers/mi/ln	0.3
Vehicle LOS	A		

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Jurisdiction	NYS DOT	Time Period Analyzed	Construction
Project Description	South Raquette Road East	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	0
Speed Limit, mi/h	30	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	138	Opposing Demand Flow Rate, veh/h	149
Peak Hour Factor	0.90	Total Trucks, %	10.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	27.7
Speed Slope Coefficient	1.78631	Speed Power Coefficient	0.55512
PF Slope Coefficient	-1.14582	PF Power Coefficient	0.69867
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	27.4

Vehicle Results

Average Speed, mi/h	27.4	Percent Followers, %	24.9
Segment Travel Time, minutes	2.19	Followers Density, followers/mi/ln	1.3
Vehicle LOS	A		

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Jurisdiction	NYS DOT	Time Period Analyzed	Construction
Project Description	South Raquette Road West	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	0
Speed Limit, mi/h	30	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	257	Opposing Demand Flow Rate, veh/h	250
Peak Hour Factor	0.90	Total Trucks, %	7.56
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	27.8
Speed Slope Coefficient	1.82927	Speed Power Coefficient	0.52632
PF Slope Coefficient	-1.17731	PF Power Coefficient	0.68923
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	27.1

Vehicle Results

Average Speed, mi/h	27.1	Percent Followers, %	36.9
Segment Travel Time, minutes	2.21	Followers Density, followers/mi/ln	3.5
Vehicle LOS	B		