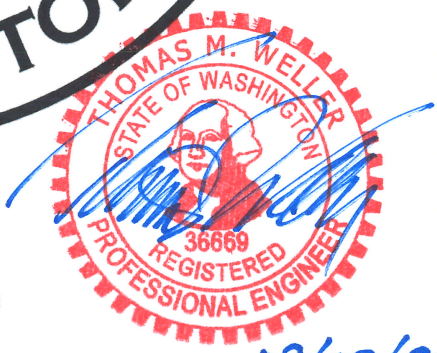


09/02/25

2024 Skagit County Road Segment & Intersection Concurrency

INTRODUCTION

In conformance with Growth Management, RCW 36.70A, Skagit County Code 14.28.110 "Annual Concurrency Assessment" requires that the County Engineer annually produce this report to update the status of County Road concurrency. The following 2024 assessment is produced to meet said requirement.

REQUIREMENTS

The concurrency assessment requires that "*The County Engineer must evaluate the high traffic County road segments (any County road segment on which there are at least 8,000 average daily trips) and high traffic County road intersections (any County road intersection into which the total approach volume is at least 7,000 average daily trips and the approach volume from all of the minor legs totals at least 1,000 average daily trips) using a Highway Capacity Manual type method (as selected by the County Engineer) to determine whether these road segments and intersections comply with the level of service standards adopted in the Comprehensive Plan.*" The Levels of Service (LOS) are described as follows in Skagit County's Comprehensive Plan.

Policy 8A-2.1 Level of Service Standards – The Level of Service (LOS) standard for County roads is C. LOS D is acceptable for all road segments that:

a) Have Annualized Average Daily Traffic (AADT) greater than 7,000 vehicles; and

b) Are NOT federally functionally classified as a Local Access Road; and

c) Are designated as a County Freight and Goods Transportation Systems Route (FGTS).

The LOS standard for County Road intersections is LOS D.

LEVEL OF SERVICE DATA

Road Segments

The methodology used to acquire the LOS of County Road segments is outlined in Appendix C (Transportation Element Technical Appendix) of the Skagit County Comprehensive Plan.

> *"The Skagit County Public Works Traffic Engineering Unit has selected an LOS study volume unit threshold of 7,000 AADT. This threshold is an indicator that a road segment may be approaching the LOS C/D threshold and should be studied in depth."*

Table 1 shows the current County roads that meet the criteria for further study and the current LOS as determined using the Transportation Research Board's Highway Capacity Manual and Highway Capacity Software developed for this use by the University of Florida. Also shown is the projected 5-year LOS. This projected LOS was determined using a 2 percent yearly growth factor for each road segment. Projects along these roadways that are scheduled to be completed within this 5-year period were not significant enough to include as separate items. As one can see from Table 1, all the criteria for LOS concurrency have been met.

All road segments in Table 1 are expected to meet County LOS standards in 2029. Skagit County Public Works will be paying close attention to these segments and traffic volumes in the coming years. Studies for these segments are included as Appendix C.

Table 1 – Road Segments

2024 Skagit County Roads with Over 7,000 ADT														
Road #	Road Name	FFC	Truck Rt	Beg MP	End MP	Length	2024 ADT	2025 ADT	2026 ADT	2027 ADT	2028 ADT	2029 ADT	2024 LOS	2029 LOS
63000	COOK ROAD	07	T2	1.750	1.800	0.050	17005	17345	17692	18046	18407	18775	These two segments are in WSDOT ROW	
63000	COOK ROAD	07	T2	1.800	1.860	0.060	17005	17345	17692	18046	18407	18775		
63000	COOK ROAD	07	T2	1.860	1.970	0.110	15022	15322	15629	15941	16260	16586	C	C
63000	COOK ROAD	07	T2	1.970	3.080	1.110	15022	15322	15629	15941	16260	16586		
63000	COOK ROAD	07	T2	3.080	3.360	0.280	15022	15322	15629	15941	16260	16586		
63000	COOK ROAD	07	T2	3.360	3.820	0.460	15107	15409	15717	16032	16352	16679	D	D
63000	COOK ROAD	07	T2	3.820	4.100	0.280	15107	15409	15717	16032	16352	16679		
63000	COOK ROAD	07	T2	4.100	4.320	0.220	15107	15409	15717	16032	16352	16679		
63000	COOK ROAD	07	T2	4.320	4.600	0.280	15107	15409	15717	16032	16352	16679		
63000	COOK ROAD	07	T2	4.600	5.000	0.400	15205	15509	15819	16136	16458	16788	D	D
63000	COOK ROAD	07	T2	5.000	5.260	0.260	15205	15509	15819	16136	16458	16788		
63000	COOK ROAD	07	T2	5.260	5.320	0.060	15205	15509	15819	16136	16458	16788		
63000	COOK ROAD	07	T2	5.320	5.390	0.070	15205	15509	15819	16136	16458	16788		
63000	COOK ROAD	16	T2	5.390	5.510	0.120	15205	15509	15819	16136	16458	16788		
63000	COOK ROAD	16	T2	5.510	5.620	0.110	15205	15509	15819	16136	16458	16788		
71500	SOUTH LAVENTURE ROAD	14	Non	0.000	0.063	0.063	9040	9221	9405	9593	9785	9981	C	C
71500	SOUTH LAVENTURE ROAD	14	Non	0.063	0.274	0.211	9040	9221	9405	9593	9785	9981		
71500	SOUTH LAVENTURE ROAD	14	Non	0.545	0.553	0.008	9151	9334	9521	9711	9905	10103	C	C
71500	SOUTH LAVENTURE ROAD	14	Non	0.553	0.701	0.148	9151	9334	9521	9711	9905	10103		
71500	SOUTH LAVENTURE ROAD	14	Non	0.701	0.715	0.014	9151	9334	9521	9711	9905	10103		
71500	SOUTH LAVENTURE ROAD	14	Non	0.715	0.730	0.015	9151	9334	9521	9711	9905	10103		
71500	SOUTH LAVENTURE ROAD	14	Non	0.730	0.773	0.043	9151	9334	9521	9711	9905	10103		
80090	PIONEER HIGHWAY	07	T3	0.000	0.883	0.883	10015	10215	10420	10628	10841	11057	C	C
80090	PIONEER HIGHWAY	07	T3	0.883	1.418	0.535	10047	10248	10453	10662	10875	11093		
80090	PIONEER HIGHWAY	07	T3	1.418	1.748	0.330	9893	10091	10293	10499	10709	10923		
80090	PIONEER HIGHWAY	07	T3	1.748	3.065	1.317	9893	10091	10293	10499	10709	10923		
80090	PIONEER HIGHWAY	07	T3	3.065	3.089	0.024	12596	12848	13105	13367	13634	13907	D	D

Road Intersections

As with Road Segment LOS, Intersection LOS methodology is outlined in the Transportation Element Technical Appendix (TETA) Appendix C of the Comprehensive Plan. Intersection LOS, according to the Highway Capacity Manual, cannot be determined at stop-controlled intersections. The individual stop-controlled leg LOS can be determined, but the overall intersection LOS cannot be determined. However, the overall LOS can be determined at signalized intersections like the one on which Skagit County is collecting data and studying. Table 2 shows the intersection on which Skagit County is collecting LOS data on a regular basis.

Table 2 – Intersections

Intersection Name	Intersection Type	NB Approach LOS	SB Approach LOS	EB Approach LOS	WB Approach LOS	Overall LOS
2024						
Cook Road / Old Hwy 99 N	**Signalized**	**C**	**C**	**B**	**B**	**C**
2029						
Cook Road / Old Hwy 99 N	**Signalized**	**C**	**C**	**C**	**C**	**C**

The full PM Peak Hour Highway Capacity reports on the intersection of Cook Road and Old Hwy 99 N for the current year and 5-year estimate are included in this Assessment as Appendix A and Appendix B respectively. This 5-year projected LOS was determined using a 2 percent yearly growth factor for each approach volume. This is by far the busiest intersection under Skagit County jurisdiction. The turn movement study used for this assessment was conducted in June of 2023 and an additional 2% increase was used for the 2024 study year.

Please note that this intersection was studied during the Peak PM hour for the Highway Capacity report as per industry standards and Concurrency requirements. Per Highway Capacity Manual & Software, the PM Peak Hour currently meets LOS Standards. This is somewhat due to traffic flows being regulated and limited by the I-5 Northbound Off Ramp restricting flows on the west approach and by train traffic on the east through lane, as there are two to three peak hour trains that travel through the at-grade rail crossing limiting eastbound through traffic.

Based on the traffic flows being regulated from both the west and east approaches the LOS of this intersection could have a lower LOS, when considering the circumstances on the approaches. However, our current traffic modeling tools cannot take train activity into account.

Skagit County has recently secured a $5.6 million grant to improve the Cook Road / Interstate 5 interchange and the adjacent Cook Road / Old Hwy 99 N intersection. This project is in the Design phase is scheduled to be undertaken with Washington State Department of Transportation cooperation in 2027 and should significantly improve mobility and LOS at this location.

SUMMARY

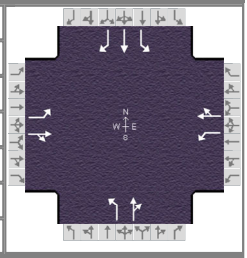
As of December 31, 2024, all Skagit County Road segments and signalized intersections meet the current LOS standards as adopted in the Comprehensive Plan of Skagit County. Therefore, all Skagit County Road segments and intersections are concurrent.

Skagit County Public Works has used the Highway Capacity Manual, Seventh Edition of 2022 and its associated software to determine all Level of Service calculations in this report.

HCS7 Signalized Intersection Results Summary

APPENDIX A

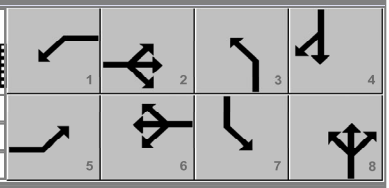
General Information				Intersection Information	
Agency	Skagit County Public Works			Duration, h	1.000
Analyst	Given Kutz	Analysis Date	Jun 21, 2024	Area Type	Other
Jurisdiction		Time Period	15:45 - 16:45	PHF	1.00
Urban Street	Cook Road	Analysis Year	2024	Analysis Period	1> 3:45
Intersection	Old Hwy 99 N	File Name	2024 Cook-Old99.xus		
Project Description	2024 Concurrency Report				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	128	475	98	46	517	59	92	215	165	60	86	135

Signal Information			
Cycle, s	67.1	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.9	1.7	26.3	3.4	0.7	16.1						
Yellow	4.0	0.0	4.0	4.0	0.0	4.0						
Red	0.0	0.0	0.0	0.0	0.0	0.0						



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	2.0	3.0
Phase Duration, s	8.6	32.0	6.9	30.3	8.1	20.8	7.4	20.1
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.2
Queue Clearance Time (g_s), s	4.9	25.3	3.0	21.2	4.7	15.6	4.4	5.9
Green Extension Time (g_e), s	0.2	2.4	0.0	2.5	0.1	1.1	0.1	1.1
Phase Call Probability	0.91	1.00	0.58	1.00	0.82	1.00	0.68	1.00
Max Out Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

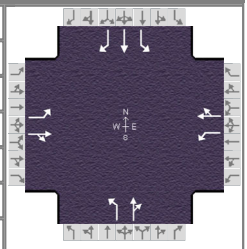
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	128	573		46	576		92	358		60	86	102
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1725	1537		1753	1807		1725	1690		1668	1752	1427
Queue Service Time (g_s), s	2.9	23.3		1.0	19.2		2.7	13.6		2.4	2.6	3.9
Cycle Queue Clearance Time (g_c), s	2.9	23.3		1.0	19.2		2.7	13.6		2.4	2.6	3.9
Green Ratio (*g/C*)	0.46	0.42		0.44	0.39		0.30	0.25		0.05	0.24	0.24
Capacity (*c*), veh/h	314	643		218	709		472	424		85	420	342
Volume-to-Capacity Ratio (*X*)	0.408	0.892		0.211	0.813		0.195	0.845		0.710	0.205	0.298
Back of Queue (*Q*), ft/ln (50 th percentile)	25.9	195		9.3	185.3		25.6	135.7		27.3	27.4	31.5
Back of Queue (*Q*), veh/ln (50 th percentile)	1.0	7.4		0.4	7.2		1.0	5.2		1.0	1.0	1.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.13	0.20		0.05	0.19		0.13	0.14		0.14	0.03	0.31
Uniform Delay (d_1), s/veh	13.8	18.2		15.4	18.3		17.4	24.0		31.5	20.5	21.0
Incremental Delay (d_2), s/veh	0.3	1.8		0.2	0.9		0.1	1.8		4.1	0.1	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	14.1	20.1		15.6	19.2		17.5	25.9		35.7	20.6	21.2
Level of Service (LOS)	B	C		B	B		B	C		D	C	C
Approach Delay, s/veh / LOS	19.0	B		18.9	B		24.2	C		24.5	C	
Intersection Delay, s/veh / LOS	20.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.12	B	2.31	B	2.11	B	2.11	B
Bicycle LOS Score / LOS	1.64	B	1.51	B	1.23	A	0.90	A

HCS7 Signalized Intersection Results Summary

APPENDIX B

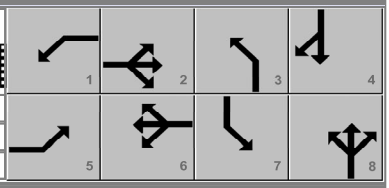
General Information				Intersection Information	
Agency	Skagit County Public Works			Duration, h	1.000
Analyst	Given Kutz	Analysis Date	Jun 21, 2024	Area Type	Other
Jurisdiction		Time Period	15:45 - 16:45	PHF	1.00
Urban Street	Cook Road	Analysis Year	2029	Analysis Period	1> 3:45
Intersection	Old Hwy 99 N	File Name	2024 Cook-Old99.xus		
Project Description	2024 Concurrency Report				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	141	525	108	51	571	65	101	238	186	66	95	149

Signal Information			
Cycle, s	84.2	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.5	2.3	35.4	4.3	0.9	21.7	
Yellow	4.0	0.0	4.0	4.0	0.0	4.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	2.0	3.0
Phase Duration, s	9.8	41.7	7.5	39.4	9.2	26.7	8.3	25.7
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.2
Queue Clearance Time (g_s), s	5.8	34.7	3.4	28.6	5.6	21.3	5.3	7.6
Green Extension Time (g_e), s	0.2	2.7	0.0	2.8	0.1	1.1	0.1	1.2
Phase Call Probability	0.96	1.00	0.70	1.00	0.91	1.00	0.79	1.00
Max Out Probability	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	141	633		51	636		101	402		66	95	116
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1725	1537		1753	1807		1725	1687		1668	1752	1427
Queue Service Time (g_s), s	3.8	32.7		1.4	26.6		3.6	19.3		3.3	3.6	5.6
Cycle Queue Clearance Time (g_c), s	3.8	32.7		1.4	26.6		3.6	19.3		3.3	3.6	5.6
Green Ratio (*g/C*)	0.50	0.45		0.47	0.42		0.32	0.27		0.05	0.26	0.26
Capacity (*c*), veh/h	286	690		188	761		468	455		85	454	369
Volume-to-Capacity Ratio (*X*)	0.493	0.918		0.272	0.835		0.216	0.883		0.775	0.209	0.314
Back of Queue (*Q*), ft/ln (50 th percentile)	36.3	322.8		13.3	276.4		36.3	214.7		39.3	39.1	46.3
Back of Queue (*Q*), veh/ln (50 th percentile)	1.4	12.3		0.5	10.7		1.4	8.2		1.5	1.4	1.8
Queue Storage Ratio (*RQ*) (50 th percentile)	0.18	0.32		0.07	0.28		0.18	0.21		0.20	0.04	0.46
Uniform Delay (d_1), s/veh	17.1	21.9		19.2	21.9		20.8	29.6		39.7	24.6	25.3
Incremental Delay (d_2), s/veh	0.5	9.0		0.3	1.9		0.1	6.1		5.8	0.1	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	17.6	30.9		19.5	23.7		20.9	35.7		45.5	24.7	25.5
Level of Service (LOS)	B	C		B	C		C	D		D	C	C
Approach Delay, s/veh / LOS	28.4	C		23.4	C		32.7	C		30.0	C	
Intersection Delay, s/veh / LOS	28.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.12	B	2.31	B	2.11	B	2.11	B
Bicycle LOS Score / LOS	1.76	B	1.62	B	1.32	A	0.94	A

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2024
Project Description	Cook Road E of Green	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	50	Access Point Density, pts/mi	12.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	631	Opposing Demand Flow Rate, veh/h	552
Peak Hour Factor	0.94	Total Trucks, %	8.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.37

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	53.7
Speed Slope Coefficient	3.33686	Speed Power Coefficient	0.47545
PF Slope Coefficient	-1.28897	PF Power Coefficient	0.76414
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.3
%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	-	-	51.2

Vehicle Results

Average Speed, mi/h	51.2	Percent Followers, %	59.6
Segment Travel Time, minutes	1.76	Followers Density, followers/mi/ln	7.3
Vehicle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2029
Project Description	Cook Road E of Green	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	50	Access Point Density, pts/mi	12.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	697	Opposing Demand Flow Rate, veh/h	552
Peak Hour Factor	0.94	Total Trucks, %	8.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.41

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	53.7
Speed Slope Coefficient	3.33686	Speed Power Coefficient	0.47545
PF Slope Coefficient	-1.28897	PF Power Coefficient	0.76414
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.5
%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	-	-	51.1

Vehicle Results

Average Speed, mi/h	51.1	Percent Followers, %	62.4
Segment Travel Time, minutes	1.76	Followers Density, followers/mi/ln	8.5
Vehicle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2024
Project Description	Cook Road W of Collins	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	6547
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	12.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	865	Opposing Demand Flow Rate, veh/h	0
Peak Hour Factor	0.94	Total Trucks, %	7.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.51

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	53.7
Speed Slope Coefficient	3.08347	Speed Power Coefficient	0.67576
PF Slope Coefficient	-1.10723	PF Power Coefficient	0.82583
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	10.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6547	-	-	51.2

Vehicle Results

Average Speed, mi/h	51.2	Percent Followers, %	62.5
Segment Travel Time, minutes	1.45	Followers Density, followers/mi/ln	10.6
Vehicle LOS	D		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2029
Project Description	Cook Road W of Collins	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	6547
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	12.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	955	Opposing Demand Flow Rate, veh/h	0
Peak Hour Factor	0.94	Total Trucks, %	7.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.56

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	53.7
Speed Slope Coefficient	3.08347	Speed Power Coefficient	0.67576
PF Slope Coefficient	-1.10723	PF Power Coefficient	0.82583
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6547	-	-	51.0

Vehicle Results

Average Speed, mi/h	51.0	Percent Followers, %	65.6
Segment Travel Time, minutes	1.46	Followers Density, followers/mi/ln	12.3
Vehicle LOS	D		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2024
Project Description	Cook Road Collins to Brickyard Creek	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4800
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	18.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	731	Opposing Demand Flow Rate, veh/h	0
Peak Hour Factor	0.94	Total Trucks, %	8.80
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.43

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	35.1
Speed Slope Coefficient	2.05671	Speed Power Coefficient	0.67576
PF Slope Coefficient	-1.09431	PF Power Coefficient	0.76342
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4800	-	-	33.6

Vehicle Results

Average Speed, mi/h	33.6	Percent Followers, %	57.7
Segment Travel Time, minutes	1.62	Followers Density, followers/mi/ln	12.6
Vehicle LOS	D		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2029
Project Description	Cook Road Collins to Brickyard Creek	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4800
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	18.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	807	Opposing Demand Flow Rate, veh/h	0
Peak Hour Factor	0.94	Total Trucks, %	8.80
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.47

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	35.1
Speed Slope Coefficient	2.05671	Speed Power Coefficient	0.67576
PF Slope Coefficient	-1.09431	PF Power Coefficient	0.76342
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4800	-	-	33.5

Vehicle Results

Average Speed, mi/h	33.5	Percent Followers, %	60.5
Segment Travel Time, minutes	1.63	Followers Density, followers/mi/ln	14.6
Vehicle LOS	D		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2024
Project Description	Cook Road East near City Limits	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	670
Lane Width, ft	12	Shoulder Width, ft	4
Speed Limit, mi/h	35	Access Point Density, pts/mi	9.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	731	Opposing Demand Flow Rate, veh/h	0
Peak Hour Factor	0.94	Total Trucks, %	8.80
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.43

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	36.0
Speed Slope Coefficient	2.05612	Speed Power Coefficient	0.67576
PF Slope Coefficient	-1.17553	PF Power Coefficient	0.73248
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	670	-	-	34.5

Vehicle Results

Average Speed, mi/h	34.5	Percent Followers, %	60.7
Segment Travel Time, minutes	0.22	Followers Density, followers/mi/ln	12.9
Vehicle LOS	D		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2029
Project Description	Cook Road East near City Limits	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	670
Lane Width, ft	12	Shoulder Width, ft	4
Speed Limit, mi/h	35	Access Point Density, pts/mi	9.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	807	Opposing Demand Flow Rate, veh/h	0
Peak Hour Factor	0.94	Total Trucks, %	8.80
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.47

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	36.0
Speed Slope Coefficient	2.05612	Speed Power Coefficient	0.67576
PF Slope Coefficient	-1.17553	PF Power Coefficient	0.73248
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	670	-	-	34.3

Vehicle Results

Average Speed, mi/h	34.3	Percent Followers, %	63.4
Segment Travel Time, minutes	0.22	Followers Density, followers/mi/ln	14.9
Vehicle LOS	D		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2024
Project Description	Pioneer Hwy County Line to Milltown	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4662
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	5.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	581	Opposing Demand Flow Rate, veh/h	451
Peak Hour Factor	0.94	Total Trucks, %	9.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.34

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.4
Speed Slope Coefficient	3.37715	Speed Power Coefficient	0.48892
PF Slope Coefficient	-1.28032	PF Power Coefficient	0.78370
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.2
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4662	-	-	53.1

Vehicle Results

Average Speed, mi/h	53.1	Percent Followers, %	56.7
Segment Travel Time, minutes	1.00	Followers Density, followers/mi/ln	6.2
Vehicle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2029
Project Description	Pioneer Hwy County Line to Milltown	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4662
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	5.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	641	Opposing Demand Flow Rate, veh/h	498
Peak Hour Factor	0.94	Total Trucks, %	9.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.38

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.4
Speed Slope Coefficient	3.38829	Speed Power Coefficient	0.48236
PF Slope Coefficient	-1.28626	PF Power Coefficient	0.78159
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.2
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4662	-	-	52.9

Vehicle Results

Average Speed, mi/h	52.9	Percent Followers, %	59.7
Segment Travel Time, minutes	1.00	Followers Density, followers/mi/ln	7.2
Vehicle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2024
Project Description	Pioneer Hwy Milltown to Fisher	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2825
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	5.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	590	Opposing Demand Flow Rate, veh/h	446
Peak Hour Factor	0.94	Total Trucks, %	9.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.35

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.4
Speed Slope Coefficient	3.35442	Speed Power Coefficient	0.48971
PF Slope Coefficient	-1.31106	PF Power Coefficient	0.77762
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2825	-	-	53.1

Vehicle Results

Average Speed, mi/h	53.1	Percent Followers, %	58.1
Segment Travel Time, minutes	0.60	Followers Density, followers/mi/ln	6.5
Vehicle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2029
Project Description	Pioneer Hwy Milltown to Fisher	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2825
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	5.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	652	Opposing Demand Flow Rate, veh/h	493
Peak Hour Factor	0.94	Total Trucks, %	9.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.38

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.4
Speed Slope Coefficient	3.36563	Speed Power Coefficient	0.48307
PF Slope Coefficient	-1.31725	PF Power Coefficient	0.77559
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2825	-	-	52.9

Vehicle Results

Average Speed, mi/h	52.9	Percent Followers, %	61.2
Segment Travel Time, minutes	0.61	Followers Density, followers/mi/ln	7.5
Vehicle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2024
Project Description	Pioneer Hwy Fisher to Roundabout	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	8696
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	5.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	586	Opposing Demand Flow Rate, veh/h	410
Peak Hour Factor	0.94	Total Trucks, %	7.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.34

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.5
Speed Slope Coefficient	3.40666	Speed Power Coefficient	0.49528
PF Slope Coefficient	-1.26622	PF Power Coefficient	0.77100
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	8696	-	-	53.1

Vehicle Results

Average Speed, mi/h	53.1	Percent Followers, %	56.8
Segment Travel Time, minutes	1.86	Followers Density, followers/mi/ln	6.3
Vehicle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2029
Project Description	Pioneer Hwy Fisher to Roundabout	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	8696
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	5.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	647	Opposing Demand Flow Rate, veh/h	452
Peak Hour Factor	0.94	Total Trucks, %	7.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.38

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.5
Speed Slope Coefficient	3.41729	Speed Power Coefficient	0.48877
PF Slope Coefficient	-1.27207	PF Power Coefficient	0.76893
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	8696	-	-	53.0

Vehicle Results

Average Speed, mi/h	53.0	Percent Followers, %	59.7
Segment Travel Time, minutes	1.87	Followers Density, followers/mi/ln	7.3
Vehicle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2024
Project Description	Pioneer Hwy Roundabout to I-5	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	127
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	641	Opposing Demand Flow Rate, veh/h	556
Peak Hour Factor	0.94	Total Trucks, %	7.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.38

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.7
Speed Slope Coefficient	2.50116	Speed Power Coefficient	0.47494
PF Slope Coefficient	-1.40929	PF Power Coefficient	0.70015
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	10.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	127	-	-	37.8

Vehicle Results

Average Speed, mi/h	37.8	Percent Followers, %	64.4
Segment Travel Time, minutes	0.04	Followers Density, followers/mi/ln	10.9
Vehicle LOS	D		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2029
Project Description	Pioneer Hwy Roundabout to I-5	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	127
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	709	Opposing Demand Flow Rate, veh/h	614
Peak Hour Factor	0.94	Total Trucks, %	7.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.42

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.7
Speed Slope Coefficient	2.51348	Speed Power Coefficient	0.46837
PF Slope Coefficient	-1.41832	PF Power Coefficient	0.69827
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	127	-	-	37.7

Vehicle Results

Average Speed, mi/h	37.7	Percent Followers, %	67.2
Segment Travel Time, minutes	0.04	Followers Density, followers/mi/ln	12.6
Vehicle LOS	D		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2024
Project Description	S Laventure Rd S of Blackburn	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1447
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	539	Opposing Demand Flow Rate, veh/h	267
Peak Hour Factor	0.94	Total Trucks, %	7.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.32

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.7
Speed Slope Coefficient	2.42900	Speed Power Coefficient	0.52235
PF Slope Coefficient	-1.34216	PF Power Coefficient	0.71481
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.2
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1447	-	-	38.1

Vehicle Results

Average Speed, mi/h	38.1	Percent Followers, %	57.8
Segment Travel Time, minutes	0.43	Followers Density, followers/mi/ln	8.2
Vehicle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2029
Project Description	S Laventure Rd S of Blackburn	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1447
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	596	Opposing Demand Flow Rate, veh/h	295
Peak Hour Factor	0.94	Total Trucks, %	7.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.35

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.7
Speed Slope Coefficient	2.43756	Speed Power Coefficient	0.51631
PF Slope Coefficient	-1.34932	PF Power Coefficient	0.71336
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1447	-	-	38.0

Vehicle Results

Average Speed, mi/h	38.0	Percent Followers, %	60.6
Segment Travel Time, minutes	0.43	Followers Density, followers/mi/ln	9.5
Vehicle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2024
Project Description	S Laventure Rd E of Blodgett	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1203
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	524	Opposing Demand Flow Rate, veh/h	272
Peak Hour Factor	0.94	Total Trucks, %	7.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.31

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.4
Speed Slope Coefficient	2.41471	Speed Power Coefficient	0.52116
PF Slope Coefficient	-1.35006	PF Power Coefficient	0.71089
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1203	-	-	37.9

Vehicle Results

Average Speed, mi/h	37.9	Percent Followers, %	57.4
Segment Travel Time, minutes	0.36	Followers Density, followers/mi/ln	7.9
Vehicle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	Given Kutz	Date	06/12/2025
Agency	Skagit County	Analysis Year	2025
Jurisdiction	County	Time Period Analyzed	2029
Project Description	S Laventure Rd E of Blodgett	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1203
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	579	Opposing Demand Flow Rate, veh/h	301
Peak Hour Factor	0.94	Total Trucks, %	7.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.34

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.4
Speed Slope Coefficient	2.42351	Speed Power Coefficient	0.51498
PF Slope Coefficient	-1.35746	PF Power Coefficient	0.70942
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.2
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1203	-	-	37.8

Vehicle Results

Average Speed, mi/h	37.8	Percent Followers, %	60.2
Segment Travel Time, minutes	0.36	Followers Density, followers/mi/ln	9.2
Vehicle LOS	C		